LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

MASTER OF SCIENCE IN
FINANCE

MASTER´S FINAL WORK
PROJECT

EQUITY RESEARCH:
THE NAVIGATOR COMPANY, S.A.

NÉLIA RAFAELA FIGUEIRA RODRIGUES

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SUPERVISION:
PROF. DOUTORA ANA ISABEL ORTEGA VENÂNCIO

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List of Acronyms

AEO – African Economic Outlook

APV – Adjusted Present Value

BEKP – Bleached Eucalyptus Kraft Pulp

BCSD – Business Council for Sustainable Development

CAPM – Capital Asset Pricing Model

CDP – Carbon Disclosure Project

CAGR – Coumpounded Annual Growth Rate

CEAI – Iberian Birdlife Research Center

CHP – Combined Heat and Power

CW – Coated Woodfree

DCF – Discounted Cash-Flow

ECB – European Central Bank

FCFF – Free Cash Flow to the Firm

FSC – Forest Stewarship Council

GDP – Gross Domestic Product.

IU – Industrial Unit

IMF – International Monetary Fund

ICNF – Institute of Nature Conservation and Forests

NWC – Net Working Capital

UWF – Uncoated Woodfree

PEFC – Programme for the Endorsement of Forest Certification

PPPC - Pulp and Paper Products Council

RISI – Research Information Systems Inc.

OECD – Organisation for Economic Co-operation and Development

WACC – Weighted Average Cost of Capital

WBCSD – World Business Council for Sustainable Development

ABSTRACT

For the Master Final Work it was chosen to carry out a Valuation of The Navigator Company, S.A,. Having in account the relevance of the CFA Institute as a leading association in the investment world, and the closest relation between ISEG and CFA, it was decided to realize this MFW according to CFA guidelines.

The choice of The Navigator Company for the MFW become clear, after learning more about this Company. It is a Portuguese Company of success, an example of the potential that Portuguese firms have to contribute to wealth creation in Portugal. Navigator is the third of Portugal`s top exporters with € 1,3 Billion Exports that corresponds to 2,4% of Portugal`s exports of goods and contributes with 1% to total national GDP. It is also one of the national largest employers and a big producer of electricity, having contributed to 4% of power output in 2017, mainly from renewable energy of biomass.

The basis of Navigator business is the forest, since all products derive from it, but what makes it special is it´s respect for nature, it´s natural cycle and biodiversity.

It was performed a Valuation through the Discounted-Cash Flow (DCF) Approach, through the Adjusted Present Value (APV) Method, being reached the Price Target of 4,845 € for the year 2018, that represents an upside potential of 13,94% regarding the last Price registered by the company in 2017 of 4,252 €. It was also performed a Market Multiples Approach, that returned a Price Target of 2,887€, in this case lower than the Current Last Price recorded by the Navigator Shares. This fact was attributed to the specificities of The Navigator, regarding its´s peers. The Company has a medium Risk.

Keywords: The Navigator Company, S.A.; Equity Research; Forestry & Paper Industry; Valuation; Adjusted Present Value; Discounted Cash Flow; Multiples

RESUMO

Para este Trabalho Final de Mestrado foi escolhido realizar uma Avaliação da The Navigator Company, S.A. Tendo em conta a relevância do CFA Institute como associação de excelência no mundo do investimento, bem como a relação entre o ISEG e o CFA, foi decidido realizar este Trabalho Final de Mestrado de acordo com as orientações do CFA.

A escolha da The Navigator Company para o trabalho tornou-se clara, depois de conhecer melhor esta empresa. É uma empresa portuguesa de sucesso, um exemplo do potencial que as empresas portuguesas têm para contribuir para a criação de riqueza no nosso País. A Navigator é a terceira maior exportadora de Portugal com 1,3 biliões de euros em exportações, o que corresponde a 2,4% das exportações de bens de Portugal, contribuindo com 1% para o total do PIB nacional. É também uma das maiores empregadoras do país e um grande produtor de eletricidade, tendo contribuído com 4% da produção de energia em 2017, principalmente a partir de energia renovável de biomassa.

A base do negócio Navigator é a floresta, uma vez que todos os produtos derivam dela, mas o que a torna especial é o respeito que demonstra pela natureza, seu ciclo natural e sua biodiversidade.

Foi realizada uma Avaliação através da Abordagem do Discounted Cash Flow (DCF) pelo Método do Adjusted Present Value (APV), tendo sido atingido o Preço-Alvo de 4.845 € para o ano de 2018, que representa um potencial de valorização de 13,94% em relação ao último preço registado pela empresa em 2017, de 4.252 €. Foi também realizado a abordagem pelo Método de Múltiplos de Mercado, que retornou um Preço-Alvo de 2.887 €, neste caso, inferior ao Último Preço registado pelas Ações da Navigator. Este fato foi atribuído às especificidades da Navigator em relação aos seus pares. A empresa possui um risco médio.

Palavras-Chave: The Navigator Company, S.A.; Equity Research; Indústria do Papel e Floresta; Valuation; Adjusted Present Value; Discounted Cash Flow; Multiples

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ACKNOWLEDGMENTS

The realization of this MFW was a bumpier process than I expected, but thanks to some amazing people that always stood by my side in the ups and downs, it was possible to conclude this amazing and challenging journey. So it is mandatory that I should thank all of these persons that help me get to the conclusion of this Master. I should thank in first place to my mother, who was with me all the way in this process, as in my life, and always was my best example of strength and kindness, my personal hero.

Another amazing person that was essential for me to conclude this process was my supervisor Prof. Ana Venâncio, only thanks to her guidance and comprehension I could follow ahead, and I know that I owe to her the conclusion of this Master.

Thank you to my brothers, my father, my family and my boyfriend for all the patient and support. To my friends, and to all of professors from ISEG who were part of my journey and my learning process. To all of you I am very grateful.

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1. Research Snapshot

The Navigator C., S.A,
HOLD
Medium Risk
October 2018
Portugal

Table 1 – Risk Assessment

LOW	MEDIUM	HIGH

Source: Author

Table 2 – Market Profile

S&P Rating	**BB/Stable/B**
Moody´s Rating	Ba2
Last Price 2017	4,252 €
Market	€ 3,05 Billion
Nº of Shares	717 500 000
Price Target	4,845 €
Ticker	NVG
Industry	Paper & Paper Products

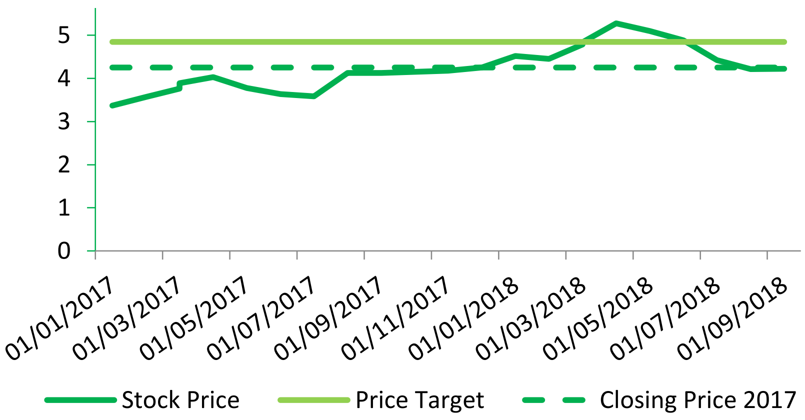
Source: Company Data, Bloomberg, S&P Global Ratings, Moody´s Investors Service

The Navigator Company Group comprises The Navigator Company, S.A. and its subsidiaries. It is a Portuguese company that operates in the sector of Basic Materials, specifically in the Paper & Paper Products Industry, with activities based at four large scale production mills in Portugal. It is an integrated forest producer, whose final products are paper, pulp, tissue and energy. The Navigator Company has 120,000 hectares of forest under management and the largest eucalyptus plant nursery in Europe.

It is listed on the Lisbon Stock Exchange, Euronext Lisbon, with the Ticker NVG, and it is part of its stock index: PSI 20. The last closing price of Navigator in 2017 was 4,252, and presently at 28.10.2018 it stands at 4,222. (Figure 1) The Company is also listed on Frankfurt Stock Exchange as PO9.F and in the London Stock Exchange as 0KLO.L.

The **price target reached through the Discounted Cash Flow Approach was 4,845€**, which compared with 4,252€, the last value of 2017, represents an upside potential of 13,94%. Taking in account the medium risk of the Company our Investment Recommendation would be to **Maintain/ Hold** the shares. Considering the Relative Valuation only, the Recommendation would be to sell (Table 3 and 4), however the Navigator has an Operational efficiency higher than its main competitors, with Operational Costs below average Cost curve, mainly due to being vertically integrated, so we are confident in the recommendation of Holding the Shares.

Figure 1 - Navigator Stock Price in Euronest Lisbon (NVG)



Source: Bloomberg

The Navigator Company is the leading producer of Uncoated Woodfree Paper in Europe, and this Business Segment is in fact the major contributor to its revenues (aroud 70%). With a workforce of around 3,000 employees, the company had an annual turnover of over € 1.6 billion in 2017. Its main markets are Europe (70%), Africa (9%) and North America (8%) and is focused on premium products and own brands. Listed since 1995, The Navigator Company has a controlling shareholder, Semapa that holded 69.35% of its shares as of the end of December 2017 (Appendix 15). (Company, Annual Report 2017, 2018)

Table 3 – Valuation Output

Valuation	Output	Upside/Downside Potential
DCF	4,845€	13,94%
Multiples	2,887€	-32,09%

Source: Author

Table 4 – Investment Grade

	LOW RISK	MEDIUM RISK	HIGH RISK
BUY	>15%	>20%	>30%
HOLD/ NEUTRAL	>5% and <15%	>10% and <20%	>15% and <30%
REDUCE	>-10% and >5%	>-10% and >10%	>-10% and >15%
SELL	<-10%	<-10%	<-10%

Source: BPI Rating Scheme

2. Business Description

The Navigator Company is a distinguished brand in Portugal and around the world. Accounted between Portugal's top exporters, received the award of "Biggest and Best Exporter" from Exame magazine, with 1,3 billion € Exports corresponding to 2,4% of total Portuguese Exports in 2017. This reflects the fact that 95% of its products are sold outside Portugal, specifically pulp and paper to 130 different countries. The Company also boosts Portuguese Economy employing 3197 workers, and contributing to 31 thousand direct, indirect and iduced jobs, with 72% of its 7.658 Suppliers being Portuguese. (Company, Annual Report 2017, 2018)

2.1. History

The Navigator Company Group initiated its journey in the mid 1950's, when a group of technicians from "Companhia Portuguesa de Celulose de Cacia" made this company the first in the world to produce paper pulp from eucalyptus using the kraft process (BEKP - Bleached Eucalyptus Kraft Pulp). This pulp was appointed as ideal for manufacturing high quality paper. Afterwards, Portucel – Empresa de Celulose e Papel de Portugal, E.P was created in 1976 as a result of the nationalization of all of Portugal's cellulose industry, resulting from the merger of Portuguese pulp and paper mills and packaging factories. Years after, towards to its privatization, it was redenominated to Portucel, SGPS, S.A., and, in 1995, the company was reprivatized, and became a publicly traded company.

At the start of the 21st century, aiming to restructure the paper industry in Portugal, Portucel, S.A. acquired Papéis Inapa, S.A. (Setúbal) in 2000, and Soporcel – Sociedade Portuguesa de Papel, S.A. (Figueira da Foz) in 2001, effectively consolidating the industry in Portugal. Those key strategic decisions resulted in the Portucel Soporcel Group (currently The Navigator Company Group), which is the largest European and one of the world's largest producers of Bleached Eucalyptus Kraft Pulp (BEKP) and Uncoated Woodfree Paper (UWF). In 2003, the Portuguese State initiate the sale of Portucel, S.A. with the disposition of 30% of it's equity, acquired by Semapa Group. Afterwards, Semapa assured the Group´s control by guaranteeing a stake of approximately 70%. Under new ownership, the company consolidated its leading position in international markets and in 2006 announced the construction of a new paper mill in Setúbal - About the Future, which allowed The Navigator Company to became Europe's leading manufacturer of uncoated woodfree printing and writing paper and one of the largest in the world. In February 2015, Portucel group started its activity in the Tissue segment with the acquisition of AMS-BR Star Paper, S.A., a company that holds and explores a tissue paper mill, located in Vila Velha de Ródão. In July 2016, the Navigator Company Group expanded its activity to the pellets business with the construction of a plant in Greenwood, state of South Carolina, United States of America.

On February 6th 2016, the Portucel Group changed its corporate brand to The Navigator Company, and its name to The Navigator Company, S.A. (Figure 2). This new corporate identity represented the unification of the culture of companies with more than 60 years of history, with the objective to give the Group a more appealing and modern image, whilst expanding its international reach and moving into new business areas.

The Navigator Company is today the country's third larger exporter, representing 2,4% off the country's total exports of goods, and approximately 6% of the total containerised and conventional cargo exported through Portuguese ports. It is the exporter generating the highest level of national value added, contributing alone to 1% of Portugal's total GDP.

Figure 2 – Change of Corporate Name

Source: Company

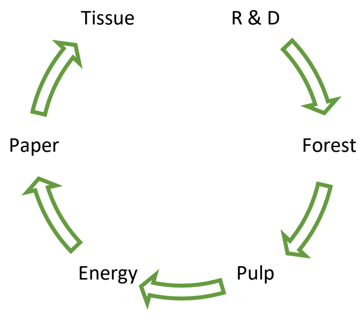
2.2. The Navigator Company Business Areas

The Navigator Company S.A. acts, as an integrated producer, in six main areas: Research and Development, Agroforestry, Pulp Production and Sales, Energy, Paper Production and Sales and Tissue Production and Sales (Figure 3). In 2016 the area of pellets was introduced, with the expansion to USA, but it was divested in 2018.

2.2.1. Research and Development – RAIZ

RAIZ - Forest and Paper Research Institute, is where the research carried out by the Company takes place, playing an important role in maintaining and strengthening its competitiveness. It is a private non-profit organization recognized as a Research and Technology Organization of the Portuguese Scientific and Technological System, which develops research, consulting, specialized services and training on forest, pulp and paper areas of expertise, leading the world in the genetic improvement of Eucalyptus globulus. It was created in 1996 as an association and it is associated, besides The Navigator Company, with the University of Coimbra, the University of Aveiro and University of Lisbon (School of Agriculture).

Figure 3 – The Navigator Company – An Integrated Producer



Source: Company Data

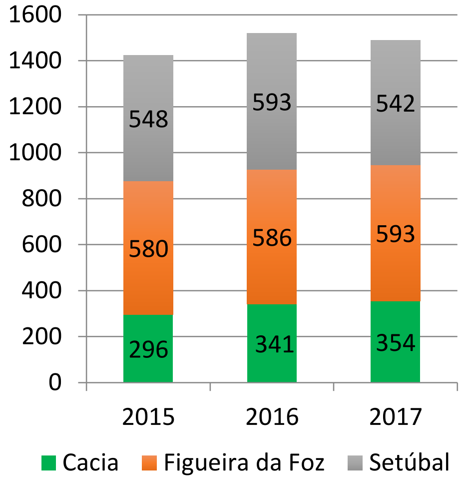
2.2.2. Agro-Forestry

The woodlands are one of the most precious assets of the Company, and the sustainability of the forestry sector is of core importance to The Navigator. The Group manages 112 thousand hectares of woodlands 100% certified under the international FSC1® and PEFC2™ schemes, and has Europe's largest certified nursery facility, with the ability to produce 12 million plants a year. The forests managed by Navigator have the ability to sequestrate 5.4 million tons of CO_2 from the air, making it cleaner.

The production of forest and ornamental plants is provided by Viveiros Aliança, S.A., a subsidiary of The Navigator Company with more than 30 years of activity. Production is divided between 3 units: Espirra (Pegões), Caniceira (Tramagal) and Ferreiras (Penamacor). They produce a wide range of plants, namely more than 30 different forest species, more than 130 ornamental species and shrubs, and 5 varieties of olive tree. The main species produced at Viveiros Aliança is Eucalyptus globulus (six million clones each year), because it allows to use less wood to manufacture the same quantity of paper: up to 46% less when compared to other conifers. These Eucalyptus are improved plants which gained the top score in the certification process conducted by the Institute of Nature Conservation and Forests (ICNF). The Navigator Company also operates the Luá Nurseries, the largest nurseries for cloned plants in Mozambique.

Around 35% of the plants produced are for internal consumption by The Navigator Company and the remaining 65% are sold on the market. In the Portuguese market, Viveiros Alianca accounts for 22% of total output and sales of certified plants of all species (24% of eucalyptus plants), and demand is increasing. The Navigator Company is committed to responsible use of forests, and so all fibrous materials used to manufacture pulp and paper is from certified or controlled origins, and the Company invests € 3.4 million in protection against forest fires (More than 40% in Prevention actions).

Figure 4 – Total Pulp Output (thousands tAD) by IU

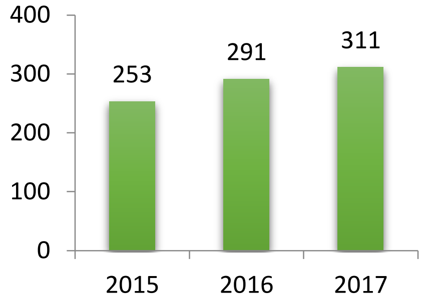


Source: Company Data

2.2.3. Pulp (BEKP) Production and Sales

The Navigator Company has an annual production capacity for 1.5 million tons of pulp, of which 80% are integrated into paper. It is the European leader in the production of BEKP (Bleached Eucalyptus Kraft Pulp) and the fifth leading producer worldwide. BEKP is produced in the Industrial Complexes of Cacia, Figueira da Foz and Setubal (Figure 4). The Cacia Complex produces around 320 thousand tons of bleached eucalyptus pulp. In the Figueira da Foz and Setúbal Complex the pulp produced is integrated into paper, being that in the first are produced each year around 570 thousand t of BEKP, and in the Setúbal pulp mill, one of the largest in Europe, around 550 thousand tons of BEKP.

Figure 5 – Pulp Sales Evolution (thousand tAD)



Source: Company Data

2.2.4. Energy

The Navigator Company commitment to renewable energy is notorious, mainly through its focus in biomass, but recently it has also become a major producer of solar power. The Company generates approximately 50% of all energy produced from biomass in Portugal, being the country's leading producer of green power from this energy source. It has annual capacity production for 2.5 TWh of electricity /year. This capability allows The Group to be more than 90% self-sufficient in energy, and generate surplus power that it introduces into the national grid, what results in a significant contribution to energy production, namely around 4-5% of all power generated in mainland Portugal is generated by the Company.

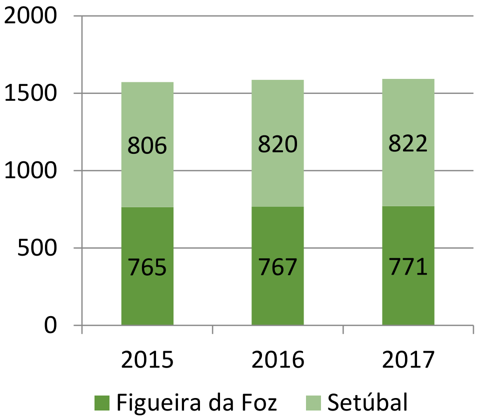
The energy generated at The Navigator Company's three industrial sites is produced in two different ways: Electricity generated at biomass co-generation plants and natural gas co-generation plants (Combined Heat and Power - CHP): these two types of facilities produce both electricity and heat, and the thermal energy is used entirely on the manufacturing of pulp and paper. Biomass power stations produce electricity only, being that 100% of this power produced is fed into the national grid. The three Industrial Complexes of Cacia, Figueira da Foz and Setúbal have a biomass co-generation plant working in conjunction with the pulp mill. At Setúbal and Figueira da Foz sites there are also a natural gas co-generation plant, and in Cacia and Setúbal there is a biomass power station producing renewable energy.

2.2.5. Paper Production and Sales: UWF

The Company is the leading European manufacturer of UWF printing and writing paper, and the 6th leading producer worldwide. It has a total UWF paper capacity of 1.6 million tonnes/year. The paper is produced in Figueira da Foz and Setubal Industrial Units (Figure 6), through an integrated process. Figueira da Foz became an Integrated Industrial Complex, by combining pulp production with paper manufacture, with the first paper machine in 1991, and this was reinforced later in 2000 with the second paper machine. The Setúbal Industrial Complex is home to a pulp mill and two paper mills, one of which - About the Future - was inaugurated in 2009 and is one of the largest and most sophisticated plants in the world.

Navigator – the world's best-selling office paper in the premium segment, has a market share of 50% in Europe; The Company paper owes its quality to the fibre from Eucalyptus globulus, recognized globally as the ideal wood for manufacturing premium office supplies. The paper is biodegradable, with high recycling rates and manufactured mostly from renewable sources. (Company, Annual Report 2017, 2018)

Figure 6 – Total Paper Output (Thousand Tons) by IU



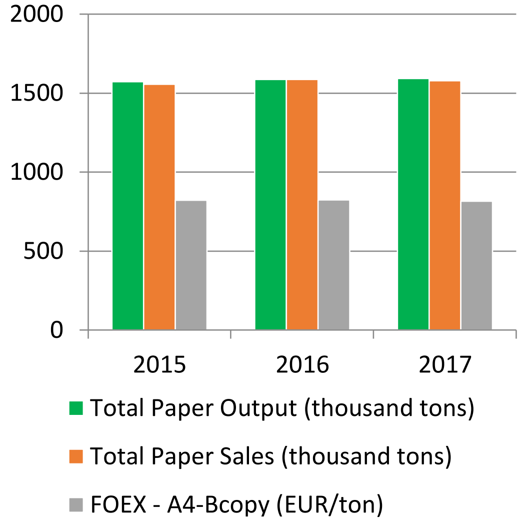
Source: Company Data

2.2.6. Tissue Production and Sales

Navigator has an annual production capacity of 70 thousand tons for reels, and 65 thousand tons of finished products concerning tissue paper. The factory in Vila Velha de Ródão is the industrial unit dedicated to the production of Tissue paper, and it is the most efficient Tissue factory in the Iberian Peninsula and the second in Europe, since is linked by pipeline to the pulp producer, which results in reduced environmental impacts and savings in efficiency and performance of the process.

The Tissue market is identified by Navigator as a strategic area for expansion, with consumption growth in Western Europe, where the largest sales are in toilet paper and kitchen roll/towels, Southern Europe with paper napkins recording higher sales, and Central/Northern Europe. The Tissue Products are commercialized under the brand amOOs. " (Company, Divulgação de Resultados do ano 2015, 2016)

Figure 7 – Total Paper Output and Sales



Source: Company Data

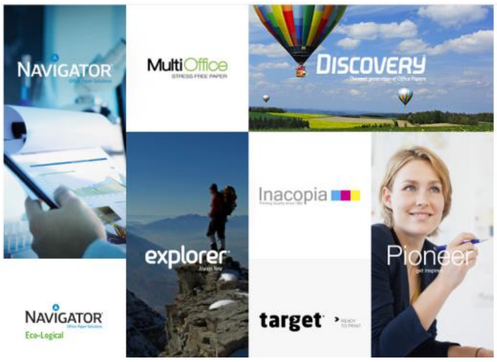
2.3. Branding

Developing its own brands is an important part of The Navigator Strategy. The Navigator Company's brand portfolio is divided into office paper brands and offset paper brands.

Office Paper Brans: intended for professional or home use (Figure 8):

- **Navigator** and **Navigator Eco-Logical**: Navigator is the world's best-selling premium paper, with consumers in more than 130 countries.
- **Pioneer:** Pioneer is a premium office paper brand specifically targeted at women.
- **Inacopia:** Inacopia was launched in 1982, and was the world's first office paper produced entirely from Eucalyptus globulus pulp.
- **MultiOffice:** The Multioffice brand offers a multi-functional paper product for any printing or copy applications, having wined a reputation with consumers for high standards of quality and performance.
- **Discovery:** Discovery is the European leader in the lightweight office paper segment, made with exceptional standards of eco-efficiency, it is focused on a balance between environmental results, lower grammage and excellent paper performance.
- **Target:** The Target brand offers a vast range of paper products aimed at consumers seeking to achieve maximum impact with their ideas, through the quality of the documents used to deliver their message.
- **Explorer:** With a communication concept centered on outdoor and adventure sports, the Explorer brand is known for excellent standards of perceived quality due to the high level of whiteness, which results in excellent definition and color contrast, especially in color-intensive documents.

Figure 8 – Office Paper Brands



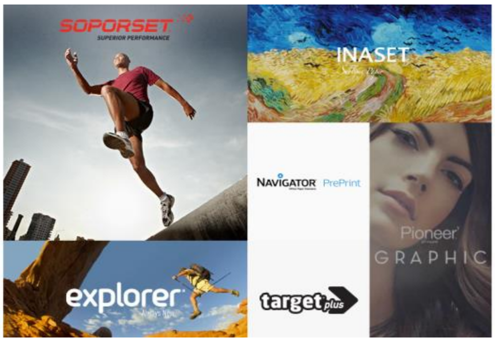
Source: Company Website

Offset paper Brands: designed to the printing industry worldwide

- **Soporset:** Soporset is the Navigator Company's leading brand for the print industry, and the European leader in the premium offset and uncoated pre-print segment sold to 80 countries.
- **Inaset:** Combining the tradition of a pioneering brand with the spirit of innovation, Inaset is a market leader in Portugal and Greece.

Target Plus, **Navigtor PrePrint**, **Explorer** and **Pioneer Graphic** also belong to the Offset paper brands.

Figure 9 – Offset Paper Brands



Source: Company Website

2.4. Strategies

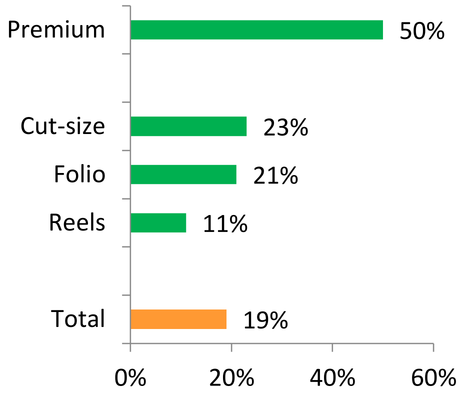
The main strategy of Navigator at the present is to **develop new opportunities for growth and diversification**.

In order to achieve that it is focusing in **Consolidate and extend leadership to Tissue and Pulp Sectors**, as a way to start diversification from Paper, in order to reduce the dependence of these market highly affected by the digital revolution. (Company, Annual Report 2017, 2018)

With this intent there are 2 Development projects in progress in Portugal:

- Construction of a tissue plant in Cacia (with reels production and converting capacity). The new mill, together with the current capacity in Vila Velha de Rodao, would make Navigator one of the leading tissue producers in Iberia, operating on a total integrated basis from pulp production, through to reels and finally conversion into end tissue products. This backward integration into pulp is an important competitive advantage, allowing profitability above the market average. The new production and converting lines for Tissue are expected to be completed in 2018-2019, with capital disbursements being split between 2017 (approximately 40%) and 2018. The project would create nominal annual capacity of 70 thousand tons. (Fujerik, 2018)
- Upgrading pulp production efficiency and environmental performance at the Figueira da Foz mill. The project is projected to improve efficiency and increase annual capacity by 70 thousand tons, to a total of 650 thousand tons of BEKP pulp.

Figure 10 – The Navigator Company UWF Paper market share in Western Europe - 2017



Source: Company Presentation

Besides this, The Navigator has a **product and brand differentiation strategy** based on quality and own brands that lead the Group´s product mix to the premium market, with 7% price premium advantage, resulting in a market share in Western Europe of 19% in UWF paper and around 50% in the premium segment (Figure 10). And as we can see by Table 5, Navigator has a higher average in terms of Premium Products and Own Brands, when compared to Europe Industry Average.

Table 5 – Operational and Marketing Indicators of Navigator, relative to Europe Industry Average

	The Navigator Company	Europe Industry Average
Premium Products	49%	14%
Mill Brands	62%	20%
Sheets	75%	69%
Operating Rates	100%	92%

Source: Company Presentation

The Company is also planning on **investing in Forestry and a large-scale pulp mill in Mozambique**, but in the long run**.** The first phase includes developing a eucalyptus woodchip production and export operation, planned to be up and running by 2023. However, The Navigator Company is apprehensive about recent political and economic developments in Mozambique, having decided to proceed with its capital project in Mozambique at a more moderate pace and implement its plans in stages. The Group expects that the bulk of these issues will be overcome by the coming months, which will allow forestry plans to proceed.

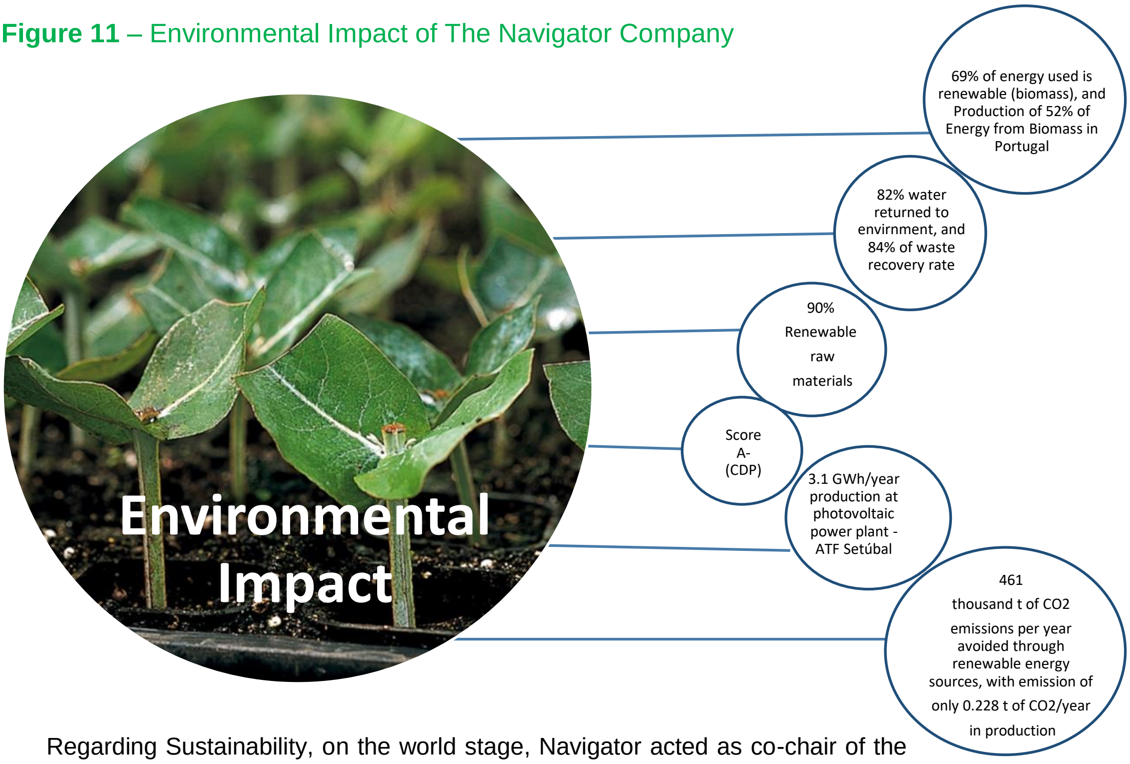
Entering the business of pellets was an opportunity to Navigator diversify it´s operations apart from uncoated woodfree paper, which is a market in declining. However, the Colombo mill experienced difficulties in 2017,and the EBITDA for pellets remained negative throughout the year. At the end of 2017, the Group announced that it had signed a contract to **sell its pellets business** to a joint venture managed and operated by an associate of Enviva Holdings, LP, for a total transaction value of USD 135 million, what happened in February 2018.

Inpactus is a new project derived from the Strategy of **Inovation and Diversification**, that is focused on Innovative Products and Tecnologies, with the aim to create a platform of excellence, combining the resources of industry and universities to develop different emerging business areas in biorefinery and exploiting the added value that bio products can offer the economy and society.

2.5. Sustainability

In the last 10 years The Navigator Company has improved its Ecological Footprint by cutting waste production in 48%, liquid effluents by 37%, water consumption by 41%, energy usage by 14% and CO_2 emissions by 5%. (Chairman, Annual Report 2017) The environmental impact of The Navigator Company is resumed in Figure 11.

Figure 11 – Environmental Impact of The Navigator Company



Regarding Sustainability, on the world stage, Navigator acted as co-chair of the Forest Solutions Group, a global platform for strategic cooperation to promote sustainable forestry management, under the WBCSD – World Business Council for Sustainable Development. In Portugal, the Navigator Company Group remained an active participant in BCSD Portugal – Business Council for Sustainable Development, supporting the MEET 2030 project for developing business scenarios and solutions for 2030, in a context of climate change and a carbon neutral economy.

"Because our business starts in the forest, it is here that our commitment to sustainability begins." States the former Chairman of The Navigator, Pedro Queiroz Pereira. Company´s woodlands are managed responsibly, keeping with strict, internationally recognized standards, what can be assured by its Forest Certification. The implementation of best practices in forestry management by The Navigator Company was certified in 2007, by the FSC® and in 2009 under the PEFC™. This commitment to certification extends beyond the boundaries of the Company, and has beeing a driving force for expansion of the woodlands certification process in Portugal, helping to build a common front to defend the interests of the country's forestry sector.

Biodiversity conservation is also a real concern of The Navigator Company in the application of its projects, where the aim of The Company is to ensure no net loss in wildlife, and ideally to contribute to a net positive gain. An example of this is its cooperation agreement with CEAI – Iberian Birdlife Research Centre, for the protection of the Bonelli's eagle, an endangered species in the Iberian Peninsula.

Since 2007, The Navigator Company has taken part in the New Generation Plantations (NGP) platform, coordinated by WWF International (World Wide Fund for Nature). This project is based on a concept of plantations which preserve the integrity of ecosystems and protect high conservation values, assuring effective stakeholder participation and contributing to economic growth and job creation.

Woodlands Protection is a priority for the Navigator Company, through fire prevention and support for firefighting. They adopt strategies in conjunction with other organizations focused primarily in reducing the likelihood of fire events, and then in minimizing exposure and risk. (Company, Consolidated Annual Results for 2016, 2017)

The Group joined forces with 2017 Web Summit as sustainable partner, offsetting carbon emissions associated with the event , and scored A- Leadership, in its first Carbon Disclosure Project (CDP) rating in Climate Change. (Company, Consolidated Annual Results 2017, 2018)

The Navigator Company's next challenges regarding Sustainability will be to align its priorities with the United Nations Sustainable Development Goals, to involve its business partners in efforts to integrate sustainable practices, step up its social responsibility, and maintaining investment in the circular economy and low-carbon technologies.

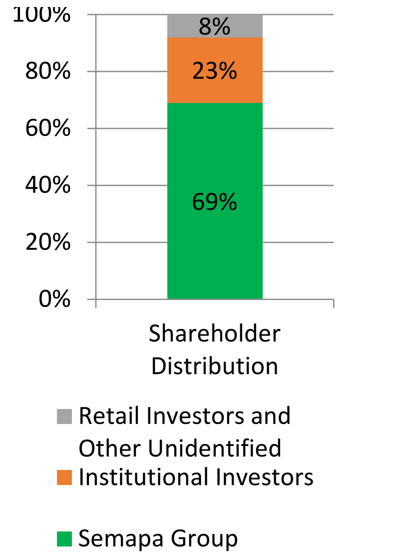
3. Management and Corporate Governance

The Navigator Company S.A. has a share capital of 500,000,000 Euros, fully paid up, and represented by 717,500,000 ordinary shares, that trade mainly in Euronext Lisbon.

The Semapa Group is the majority shareholder of The Navigator Company, with 69% of Navigator's share capital in 2017. In addition to Semapa, approximately 152 further institutional shareholders were identified and classified, accounting for 23% of the capital (Figure 12). The main Shareholders are resumed in Appendix 15.

At 31 December 2017, Navigator held 489,973 own shares, corresponding to 0.068% of its share capital and 489,973 votes at the General Meeting.

Figure 12 – The Navigator Company Shareholder Distribution



Source: Company Annual Report 2017

3.1. Company Bodies and Committees

According to the Articles of Association, the Company's bodies comprise the General Meeting, the Board of Directors, the Audit Board and a Statutory Auditor or Statutory Audit Firm.

3.1.1. General Meeting

The General Meeting has powers to elect the board members, the members of the Audit Board and the statutory auditor or statutory audit firm. The Chairman of the General Meeting is Francisco Xavier Zea Mantero, and the secretary is Rita Maria Pinheiro Ferreira. These members were elected for a period started in 2015 until 31 December of 2018.

The Company's Articles of Association provide for a ***unitary management model***, with a Board of Directors comprising executive and non-executive members and an Audit Board.

3.1.2. Board of Directors

In 2017, the Board of Directors was composed by fourteen members (Table 6) elected by the General Meeting of Shareholders and appointed for the same renewable four-year term. The Members of the Board included the Chairman, Pedro Mendonça de Queiroz Pereira, and 3 Deputy Chairmen, namely Diogo António Rodrigues da Silveira (CEO of the Navigator Company), Luís Alberto Deslandes and João Nuno Castello Branco. In August 2018 the Chairman of the Board of Directors passed away, being replaced by one of the Deputy Chairmen: João Nuno Castello Branco.

The following committees report to the Company's Board of Directors: Corporate Governance Control Committee, Sustainability Forum, Pension Fund Supervisory

Board, Property Risks Analysis and Monitoring Committee, Ethics Committee, Environmental Board and Remuneration Committee.

Table 6 – Composition of the Board of Directors

Name	Function at 31-12-2017
Pedro Mendonça Queiroz Pereira	Chairman of Board of Directors
Diogo António Rodrigues da Silveira	Chairman of Executive Commitee
Luís Alberto Caldeira Deslandes	Non-Executive Director
João Nuno de Sottomayor Pinto de Castello Branco	Non-Executive Director
António José Pereira Redondo	Executive Director
José Fernando Morais Carreira de Araújo	Executive Director
Nuno Miguel Moreira de Araújo Santos	Executive Director
João Paulo Araújo Oliveira	Executive Director
Manuel Soares Ferreira Regalado	Non-Executive Director
Adriano Augusto da Silva Silveira	Non-Executive Director
José Miguel Pereira Gens Paredes	Non-Executive Director
Paulo Miguel Garcês Ventura	Non-Executive Director
Ricardo Miguel dos Santos Pacheco Pires	Non-Executive Director
Vítor Manuel Galvão Rocha Novais Gonçalves	Non-Executive Director

Source: Annual Report 2017l

The Articles of Association states that the Board of Directors may delegate the day-to-day management of the Company to a single board member or an **Executive Committee** comprising three to nine members. On 31 December 2017, the Company's directors included five executive directors that form the Executive Committee, namely Diogo António Rodrigues da Silveira, Chairman of the Executive Committee, António José Pereira Redondo, José Fernando Morais Carreira de Araújo, Nuno Miguel Moreira de Araújo Santos and João Paulo Araújo Oliveira. The remaining directors are non-executive directos. **The non-executive members of the Board of Directors are responsible to follow-up, supervise, monitor and assess the activities of the executive directors**, taking into account, in particular, the ownership structure and dispersal of the Company's share capital**. In the case of The Navigator Company, none of the non-executive directors fits the criteria to be considered independent director**, since six of them act on behalf of owners of stakes higher than 2% of the Company's share capital, and the other three were re-elected more than two times. Despite the Non-Executive Directors not being independent, the Company believes they are fit to defend shareholders' interests in the best way because of their expertise and experience.

It should be noted that there are Securities issued by the Company and held by company officers, namely António José Pereira Redondo, an Executive Director that holds 6,000 shares, and Adriano Augusto da Silva Silveira, a Non-Executive Director that has 2,000 shares.

3.1.3. Audit Board:

The Audit Board is the Company´s supervisory body. Under the Articles of Association, the Company's audit body comprises three full members, one of whom is Chairman, and an Alternate member. As of December of 2017 the Chairman was Miguel Camargo Eiró, the Full Members are Gonçalo Nuno Caldeira, and José Manuel Vitorino, and the Alternate Member: Ana Isabel Marques.

In addition to the powers that are assigned to the Audit Board by law, it has the power and responsibility of Oversee the management of the Company, Ensure compliance with the law and the articles of association and Draw up an annual report on its audit activities, issue its opinion on the report, accounts and proposals tabled by the directors;

3.1.4. Statutory auditor or firm of statutory auditors

The Company's statutory auditor in 2017 was PricewaterhouseCoopers & Associados – SROC, Lda. represented by José Pereira Alves or António Alberto Henrique Assis. In 2018 the Statutory Auditor changed to KPMG & Associados – SROC, S.A. represented by Paulo Alexandre Martins Quintas Paixão. In addition to providing statutory audit services to the Company and its subsidiaries, the statutory auditor also provided tax consultancy services and other reliability assurance services.

3.2. Social Responsability

Since 2006, the Company has been committed to a programme of cooperation, dialogue and support for local communities, under the Company´s Community Engagement Policy, one central pillar of its policy of Corporate Social Responsibility.

In 2017, the Navigator Company invested around € 2 million in the community, being schools the main beneficiary of paper donations. Supporting projects, organizations, and sharing knowledge, especially in relation to good forestry practices and environmental principles is a priority in the relation with the community. Social and charity projects are another focus of the CSR – Corporate Social Responsibility policy, where Navigator has various projects, namely "Give the Forest a Hnad", Open Doors, Support for the Extra School Meals Programme (PERA), and the capital project in Mozambique also completed the first year of its Social Development Plan, with a number of schemes to support families and communities.

4. Industry Overview and Competitive Position

4.1. Global Economic Outlook

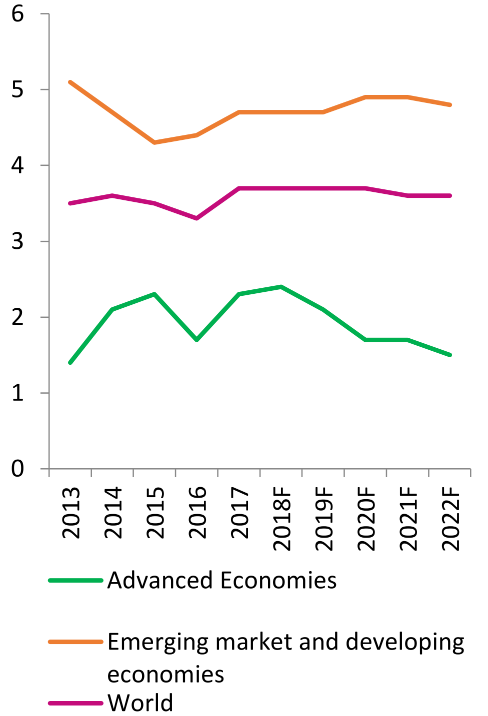
Global expansion resumed since 2016 continues, however it has become less balanced and may have reached its peak in some major economies. Potential risks to global growth arose, and from April 2018 to October 2018, the projections of IMF to global growth decreased. These risks are related to the uncertainty generated by US actions in terms of trade policy, the possible failure of Brexit negotiations, the necessity of some economies vulnerable by indebtedness adjust to interest rate increases and an emergent end of asset purchase by ECB; all of this together with tougher financial conditions in developing economies and relevant geopolitical tensions in several regions, makes downside surprises more probable in the near future. In this context, the prospect of expansion is less firm than expected in April, and the IMF cut it´s growth forecast from 3,9% to 3,7%, even though is still well above its level during 2012–16.

United States growth continues presently strong, fuelled by a fiscal expansion that may, however, have negative effects later. In the other hand, short-term growth prospects for the Euro area, Korea, and the United Kingdom were downgraded by IMF. The reassessment is more pessimistic for emerging markets, with growth moderating in Latin America (particularly Argentina, Brazil and Mexico), the Middle East (Iran), and emerging Europe (Turkey). IMF´s 2019 growth projection for India and China are also lower than projected in April, in the Chinese case due to the latest US tariffs on Chinese imports. In a global way, world economic growth is still firm, but it has plateaued, with recent decrease in trade, manufacturing and investment.

Global growth is projected at 3.7 percent in 2018 and 2019, and is expected to remain at this level in 2020 as the decline in advanced economy growth is compensated by growth of emerging market and developing economy. From there on, global growth is projected to slow to 3.6 percent by 2022–23, mainly reflecting stagnation in advanced economy growth in direction of the full potential (Figure 13). Growth in advanced economies is expected to decline to potential rates, due to slower expansion in working-age populations and weaker productivity gains. Growth in emerging market and developing economies is expected to remain at 4.7 percent in 2018–19, and rise modestly over the medium term. (World Economic Outlook - October 2018)

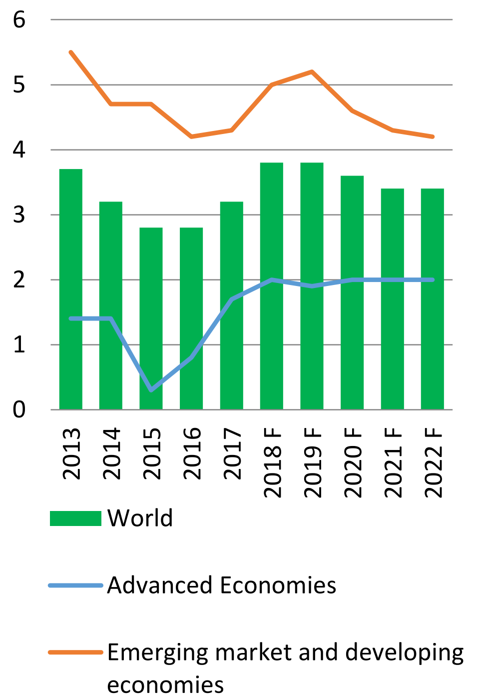
Headline Inflation has been rising, but Core inflation remains subdued in most advanced economies. In emerging markets and developing economies, core inflation remains below latest years levels (with the exception of Venezuela hyperinflation), although it has increased recently. Core inflation is significantly heterogeneous in advanced economies, remaining below central bank´s targets in majority of advanced economies, namely in euro area and Japan, but close to target in the United Kingdom and the United States. Across emerging market and developing economies

Figure 13 – Real GDP Growth (%)



Source: IMF

Figure 14 – Inflation (%)



Source: (IMF, Real GDP Growth)

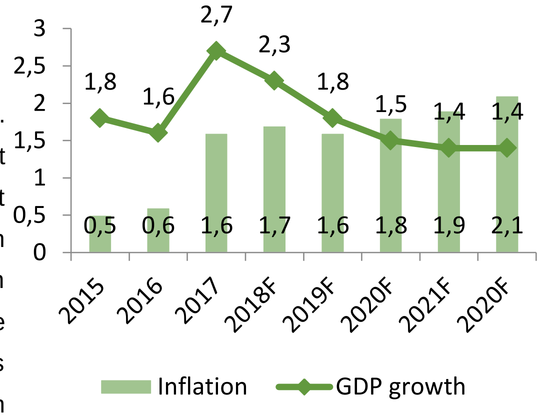
inflation increased due to currency depreciations, and rising energy prices, with activity improving in energy exporters and slowing in some importers.

Inflation is projected at 2.0% in 2018 in advanced economies, up from 1.7% in 2017. In emerging market and developing economies, excluding Venezuela, it is expected to increase to 5.0%, up from 4.3% in 2017. These averages camouflage heterogeneity across countries depending on their cyclical positions, as well as currency depreciations and rising energy prices.

4.2 Portugal Economic Outlook

After growing strongly in 2017, the economy slowed in the beginning of 2018. Real GDP growth reached 2.7% in 2017 reflecting renewed investment, robust exports, and stable consumption. Additionally, construction, investment in equipment and machinery grew vigorously in 2017 and 2018 first quarter; tourism growth remained strong, but is beginning to face capacity constraints (for example, in Lisbon Airport). In the first Quarter of 2018 growth decelerated, owing to weaker exports due to slower activity in Europe and some temporary factors. Portugal GDP growth is projected to decrease from 2,7% in 2017 to 2,3% in 2018, and to tend to 1,4% in 2022. Inflation is projected to increase from 1,6% in 2017 to 2,1% in 2022. (IMF, IMF Country Report No. 18/273, 2018)

Figure 15 – Portugal GDP Growth and Inflation%)



Source: IMF Country Report

4.3. Mozambique Economic Outlook

Mozambique is still recovering from the economic slowdown that started in 2015, as a consequence of several factors, mainly the declining prices of commodity exports, the drought effects from El Niño, the internal military confrontations, large decreases in foreign direct investment (FDI), the concealed debt crisis and fiscal tightening. This altogether, added with the 2016 governance crisis, nearly cut in half the 7% GDP historical average growth of past decade to 3.8% in 2016. The recovery of GDP growth was estimated on 4.7% in 2017, and a projected 5.3% in 2018 by the IMF, counting on the start of the exploration of natural gas deposits in Mozambique. Growth was also expected to pick up in 2017, influenced by the expansion of the extractive sector and the increase exports of coal and agricultural production. Still, Mozambique`s recovery highly depends on its external partners.

The disclosure of hidden debt worthing approximately 10% of GDP made the debt-to-GDP ratio reach 125% in the end of 2016, whit the metical suffering a devaluation against the U.S. dollar and inflation increasing. Years of expenditure expansion lead debt to unbearable levels, forcing the Government to implement a fiscal consolidation effort. In 2017, a tightening monetary policy by the Central Bank, along increase in coal exports, made the metical recover and inflation decrease. (Group, 2018)

4.4. The industry Economic Outlook

4.4.1. UWF Paper Market

The Pulp, Paper and Packaging Industry include 4 main markets: Graphic Paper, Pulp, Paperboard and Packaging, and Recovered Paper, being each one of these categories further subdivided in specific types (Appendix 17). (RISI, Pulp, Paper and Packaging, 2018)

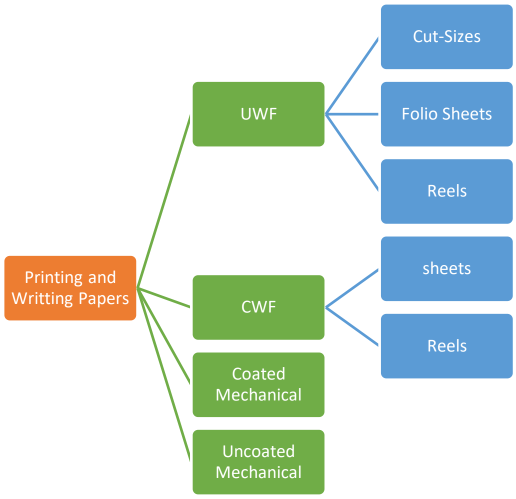
Graphic Papers include an immense variety of paper products such as newspapers, A4 copy and printer paper, book paper, envelopes, high-quality magazines and brochures, catalogues… These papers contribute to society with many purposes, such as literature, historical records, business, learning, pleasure… (EURO-GRAPH, 2018) Graphic Papers include two Grades: Newsprint, and Printing and Writing Papers. Newsprint is an uncoated paper that is mainly used for printing newspapers.

Printing and writing papers are subdivided in 4 sub-grades: Uncoated Woodfree Paper (UWF), Coated Woodfree Paper (CWF), Uncoated Mechanical Paper and Coated Mechanical Paper (Figure 16). The main difference between woodfree papers and mechanical papers is that the woodfree papers are produced through a chemical process where lignin is released from the wood, and mainly only cellulose fibers remain in the pulp. In the case of mechanical papers the wood is mechanically crunched, but the lignin remains, so in this case the wood is still wood. Lignin is what holds cellulose fibers together in the tree, it is dark and gives opacity to paper, but doesn´t add strength and reduces whiteness. (Miller, 2012) (RISI, Pulp, Paper and Packaging, 2018) Woodfree Papers can be Coated or Uncoated: CWF papers are more processed, being made from UWF (jumbo) reels as base material, to which is added one or more thin mineral coating to smooth the surface of the paper. They are divided in different categories depending if are cut in sheets or used in reels, namely the UWF can be cut-sizes (A3 or smaller, including A4), folio sheets (bigger than A3), and reels (rolls); CWF papers are divided in sheets and reels (Figure 16).

The Uncoated mechanical paper is made with the same basic raw material of newsprint, but is brighter with normally lower grammage, book paper is an example of this paper. Coated Mechanical Papers have a glossy or matt finish, and are made from a mixture of chemical and mechanical pulp, being mineral coated on both sides. These papers are used mostly for catalogues, magazines and advertising. (EURO-GRAPH, 2018)

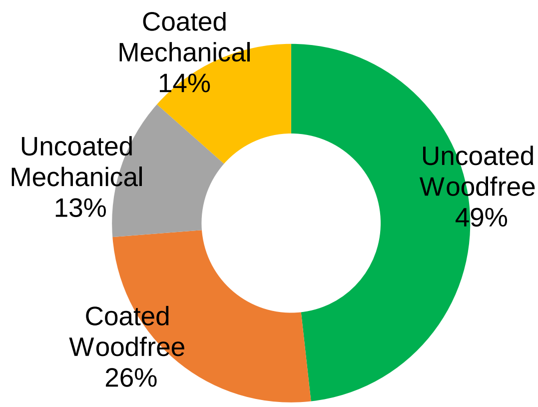
The Navigator Company is the leading manufacturer of UWF Paper in Europe, with the largest and modern mills, being that the major part of its Revenues, about 73%, comes from the UWF Paper market. However, this market is facing big challenges nowadays, as the growing global digitalization is driving Graphic Paper market to inversely shrink. The market is expected to continue to decrease as a consequence of digitalization and changing in patterns of media consumption. The growth of online media and the increasing general use of technology lead to the

Figure 16 – Sub-Grades of Printing and Writing Papers



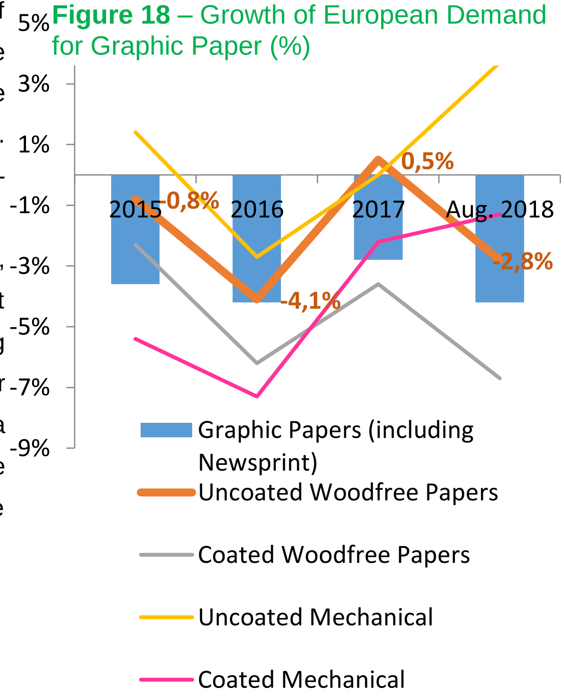
Source: RISI

Figure 17 – % Share of each Paper Subgrade on World Printing and Writing Paper Demand



Source: Navigator Presentation

Figure 18 – Growth of European Demand for Graphic Paper (%)



Source: EURO-GRAPH

growing use of digital media for reading, in terms of emails, online messaging, social networks, and even books. (Company, Annual Report 2017, 2018) (GROUP, 2018)

According to Euro-Graph, European Demand for UWF Paper in August 2018 decreased 2,8% relative to December 2017, and the Demand for Total Graphic Papers decreased 4,2% (Figure 18). According to RISI, the demand for graphic paper has been in decline for a few years with moderate signs of growth only in the developing economies. There are concerns of cost competiveness and availability, as well as doubts about how tariffs could affect global trade. (RISI, Graphic Paper) (EURO-GRAPH, 2018) Since 2012 to 2017, the CAGR of European UWF Apparent Consumption decreased 1%, and the Capacity Production decreased 2% (Figure 19).

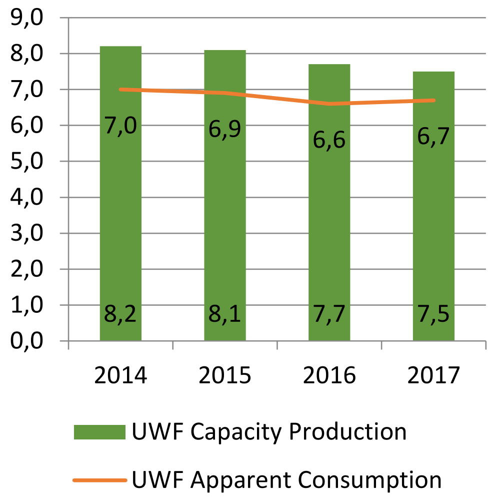
In 2017 sales of UWF of The Navigator Company, S.A. increased 0,3% in relation to the previous year, because consumption worldwide held steady and prices evolved favorably. Consumption rose 2% in Asian Markets, mainly in China, compensating the decline in US consumption. In Europe, apparent UWF consumption remained relatively stable regarding 2016, with increase in consumption of Cutsize and Folio, and decrease in reels. (Company, Annual Report 2017, 2018)

Although this decline in Graphic Paper Markets, The Navigator Company is leader in the UWF segment, that is one of the most attractive niches within the graphic-paper industry, since it´s demand is only structurally declined around 1% a year, less than in other grades, and it is subject to less pricing pressure. (Fujerik, 2018) Adding to this, the UWF paper has by far the biggest % Share of worldwide demand, compared with the other subgrades of Printing and writing Papers (Figure 17). The Benchmark Index for European Market Paper Price: A4 B-copy has been increasing, with 4 price increases in 2017 and 2 price increases in early 2018. The average price of paper according to A4 B-copy was 822€/ton in 2016, slightly decreasing to 819€/ton in 2017 and is in 847€/ton in Jan. and Mar. 2018.

Besides this, The Navigator Company is one of Europe´s most efficient paper producers, with cash cost per ton below the industry level. A big reason for that is the fact that the production of paper is made in two fully integrated mills: Setubal and Figueira da Foz. This is a big advantage, since 25% of the industry capacity is non-integrated. The strategy of product and brand differentiation based on quality and own brans results in a market share of 19% in Western Europe, and 50% in what concerns to the premium sector (Figure 10). Also, despite the digitalization era, in some areas there is a clear preference for the printed material, for example at the Education level, the Academic Reading Format International Study, found that 69% of the students inquired in its study, prefer to read on paper, believing that it results in better memorizing and learning process.

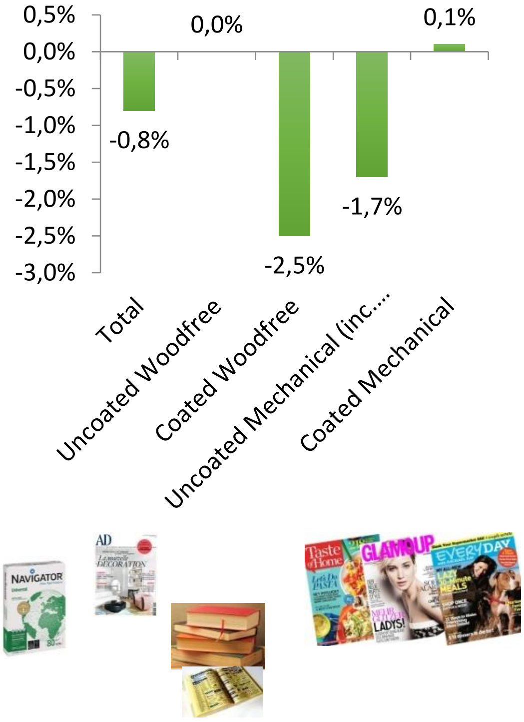
According to the Pulp and Paper Products Council (PPPC), global demand for UWF paper remained stable in the beginning of 2018, whilst the overall graphic papers, with the exception of Newsprint, contracted -0,8% (Figure 20).

Figure 19 – Evolution of European UWF Apparent Consumption (M tons)



Source: Navigator Presentation

Figure 20 – Worldwide demand for Graphic Papers in Jan.-Fev. 2018



Source: Navigator Presentation

4.4.2. Pulp Market

Pulp is the main raw material for paper products, and the price of pulp is expected to continue growing. In 2017 pulp market have experienced a growth of demand in the order of 1,6%, that together with a decrease in supply of -1% due to Capacity adjustments, resulted in a very positive pulp market. The Outlook for 2018 Pulp market remains positive, with some supply issues and positive impacts on historical growth of demand due to substitution effects in China. In this case China has a positive impact on demand since it doesn´t have much virgin fiber, importing greater part of the virgin components. (Fisher, 2018)

There has been an ascending trend in pulp prices that is showing to continue in 2018, since pulp producers have announced new price increases for April 2018. The PIX Index for pulp, for Europe, the BHKP EUR/ton has increased since an average value of 673€/ton in 2016, to 723€/ton in 2017, and is in early 2018 with an average value of 827€/ton. The BHKP USD/ton has had a steepest climb since 717 USD/ton in 2016, to 817 USD/ton in 2017 and an average value in early 2018 of 1016 USD/ton.

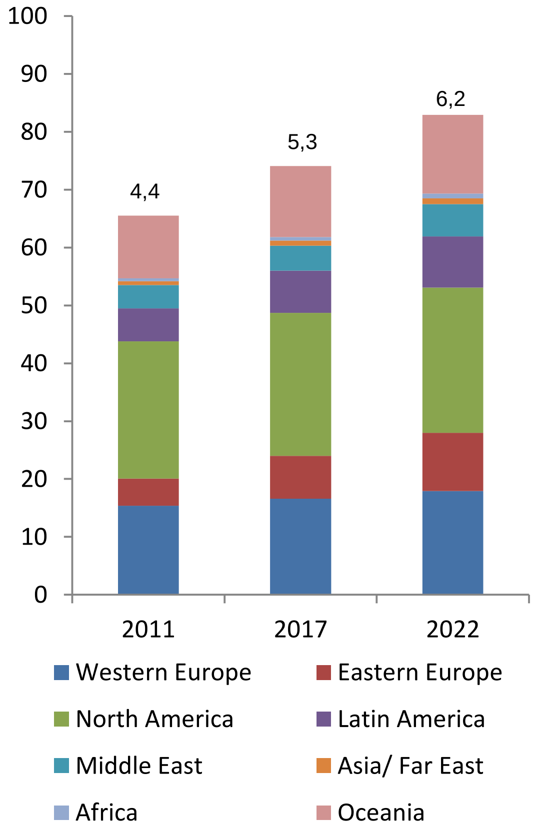
World demand for market pulp continues to increase with a major driver of this expansion being the growth in tissue demand. In 2016, tissue was estimated to account for half of market pulp demand in North America, a third of pulp demand in Europe and a quarter in China. Contrasting with this, the demand for market pulp largest historical use – Graphic Papers – is projected to decrease around 1% annually. (Cody, 2016)

4.4.3. Tissue Market

The investment in the Tissue market was an opportunity for The Company to growth and go beyond its acknowledged leadership in the UWF paper business. The tissue sector is having an annual growth of 2 to 3% and The Company believes it can develop an innovative business model, based on the direct integration of pulp to reels and then conversion into end tissue products, at a low production cost. The positive trend in tissue business is driven by economic growth, especially in the tourism sector. In this way, Global Tissue Consumption is increasing with economic growth, being higher at developed economies (Figure 21). Tissue is growing and this growth is expected to go through 2022 and beyond, with demographic and macroeconomic data continuing to support this evolution in tissue consumption worldwide. The emerging markets account for about 80% of global growth of tissue, with China in front due to it´s economy increasingly driven by consumption.

In October 2018, the Tissue World Magazine announced that The Navigator Company would increase the price of its tissue papers in Europe, by 8 to 12%, starting of as 1 of November. This increase follows two previous price increases in January and July 2018 and is justified with the increase in key raw materials costs, namely pulp, energy and chemicals. (Magazine, 2018). So, the Tissue market is

Figure 21 – Global Tissue Consumption per Capital (Kg)



Source: Navigator Presentation

facing pressure on margins, mainly due to the increase of the principal raw material-pulp, and also high competition, related with the expected extra capacity in Iberian Peninsula. (Company, Annual Report 2017, 2018)

4.4.4. Energy Market

The Biomass power market is expected to growth significantly as a result of technological advances and increasing focus in alternative renewable energies, due to the increasing demand for energy. Renewable energies are expected to become more relevant in the mix of energy as the rate of electrification increases. (Fund, 2018) The increase use of biomass from plants and manure materials to create biomass fuels for transportation and produce electricity will drive the industry growth. Woody biomass is expected to be the main source of power from biomass, followed by agriculture and forest residues. (Research)

4.5. SWOT Analysis

Table 7 – SWOT Analysis of The Navigator Company, S.A.

Strengths	Weakness
○ Leader in the UWF Paper Premium Segment ○ Nurserie of plants (ability to produce from scratch it´s raw material) ○ Research & Development Institute (Optimization of processes) ○ Vertical Integration results in Lower Operational Costs and very efficient Operations	○ Forestry based business (reliant on forest, nature) ○ Highly dependent on machinery – Transformation Process ○ Navigator's sizeable exposure to graphic-grade paper ○ The production Units are very concentrated (Portugal) ○ Relatively limited size and scope
Opportunities	**Threats**
○ Pulp, Tissue and Renewable Energy growing markets ○ Increase capability of production of expanding business: Tissue and Pulp ○ Mozambique Projected nurserie (increase raw material production)	○ Structural decline of Graphic-Paper market (Digital Era, paper becoming obsolete) ○ Environmental Legislation ○ Environmental disasters (fires) ○ Semapa high dependence of Navigator dividends

4.6. Porter´s five Forces Analysis

Threat of New Entry (Low: 1)

This is an industry Capital dependent, with very high costs of entry due to the high Capital investment in machinery needed, and high fixed maintenance costs. Besides that, to have a cost advantage and a competitive chance new companies should also have the ability to produce raw material, in this case wood, the basis to the production of pulp and paper, otherwise the variable costs could also be very high and unpredictable. The pulp and paper production is a Chemical process that also involves specialist knowledge. With this structure of costs, to have competitive price and quality, the capacity of benefiting from economies of scale is determinant.

Due to this, the threat of new entrants is low, being only probable the entrance of new companies that already operate in the forestry area.

Bargaining Power of Buyers (Medium/ High: 3)

The Navigator has some brand specificity and is known for its quality, so although it has many competitors, the Customers who know the brand tend to be loyal to it.

Threat of Substitution (High: 4)

There is a high risk of substitution in the major business segment of The Navigator Company, the UWF Paper Segment. In this segment, there is the real risk of substitution by digital forms, since our society is increasingly using digital forms as way to substitute paper. The use of digital reading is more economic, saving the costs of paper and printing, however in some areas the paper format is still prefered by the majority, as in the case of education, because the digital substitution is not the same, and doesn´t allow the same experience as paper.

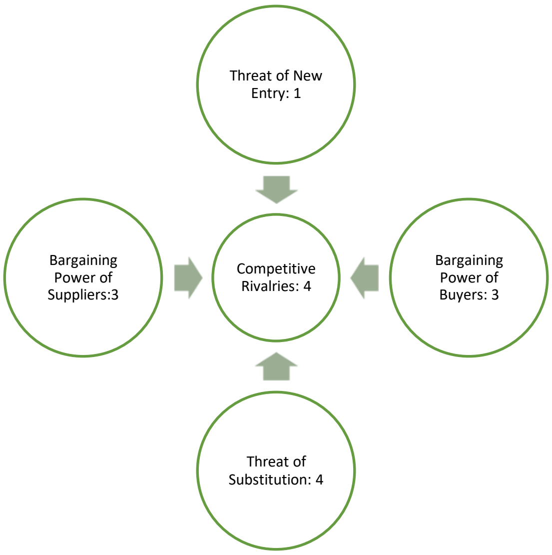
Bargaining Power of Suppliers (Medium/ High: 3)

A big advantage of the Company is that it cultivates eucalyptus, a source of wood to produce pulp, that it sells or integrates into other end products. However, the trees planted have a natural cycle, and only a part of the wood will be ready to use each year, so the Company has to buy wood to cover all production needs, still being partially dependent on wood suppliers. The fact that the Company wants Certified Wood will restrain the Suppliers available and give them more bargaining power, besides this, this raw material is subject to natural disasters that can limit supply and increase prices. Another important raw material for the production process are chemicals. In this way, The Company has 7.658 suppliers, from which 72% are Portuguese and they have a medium/ high bargaining power.

Competitive Rivalries (High: 4)

The Navigator competes with international companies, and is relatively small compared to the main players, so the competition is high. However, with its product differentiation and quality, besides its cost efficiency it is capable of fighting for its market share.

Figure 22 – Porter´s 5 Forces of The Navigator Company, S.A.



4.7. Competitors and Peer Companies

In order to choose the main competitors of The Navigator Company, S.A. the platform Amadeus was firstly consulted, and through it were obtained the closest 10 international companies according to Revenues and with the same activity of The Navigator, in this case “Wholesale of other intermediate products”. Due to the vast spectrum of this activity, several of the companies reached in this way were eliminated, since were not in the Paper and Forestry Industry. Were then added to the list of consideration of Competitors, the Competitors in the UWF Paper Segment, according to a Presentation of The Company, and the Leading Companies in Paper and Forest Products from a Moody´s Industry Profile appointed in Amadeus platform, as well as other similarly rated peers according to Moody. In total we reached 29 possible competitor companies, from where we eliminate the ones in other industry´s (the first case), the Private Companies and a Company that had filled bankruptcy, resulting in 13 Competitor Companies of The Navigator Company (Appendix 12)

From these Competitors, 4 Peer Companies were selected, as the most similar to The Navigator Company S.A., having in account Sales, Net Income, Total Assets, EBITDA and Market Capitalization (Appendix 13). However, it should be pointed that is extremely difficult to find exact comparables, since The Navigator has a few different business segments related with the Paper and Forestry Operations, but a lot of its competitors are bigger and more diversified into different business segments in the same industry, as for example paperboard and chemicals, or actuate in the same business areas, but with different focus. Having this in mind, the 4 Peer Companies reached are:

- **SAPPI:**

SAPPI is a global diversified woodfiber company that produces pulp, printing and writing papers, packaging and speciality papers, as well as biomaterials and biochemicals. It has around 12.500 employees in 35 countries with mills in Europe, the United States and Southern Africa. (sappi - Group profile)

- **ENCE ENERGIA Y CELULOSA SA.:**

ENCE ENERGUA Y CELULOSA, S.A. is a Spanish company that produces high quality eucalyptus pulp, is the leading producer of biomass energy in Spain, and is a Leader in Forest management with 67.300 hectares under management.

- **METSÄ BOARD OYJ:**

Metsa is a Finnish Company that transitioned from Europe´s largest paper producer to a pure paperboard company, being today a leading producer of premium paperboards. It has 8 Production Units and also produces Bioenergy.

- **NEENAH, INC.:**

Neenah, Inc. is market leader manufacturer of papers for premium writing, text, cover, digital, packaging and label applications, being focused on the premium paper market. It also offers recycled and alternative fiber products while reducing the environmental footprint.

5. INVESTMENT SUMMARY

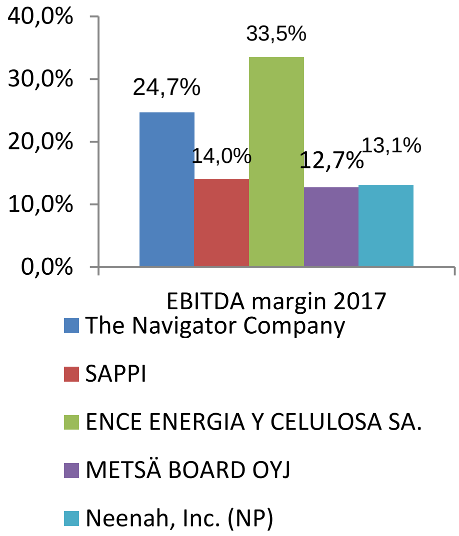
The Navigator Company is an integrated producer of, primarily, UWF printing and writting paper, leading the European market in this segment. The Company also operates in the Pulp, Tissue, Energy and Forestry business, and has been expanding and optimizing the Pulp and Tissue Production as way to diversify from UWF Paper, whilst maintaining quality and uniqueness of all products. The Navigator has its operational activities centered in Portugal, with 4 Industrial mills, a Nursery and a Research Development Center, with Subsidiaries worldwide (Appendix 16).

The Navigator has a positive contribution to the Country, producing about 1% of national GDP. It is also a big Exporter, employing about 3.191 employees directly, and creating indirect work through Portuguese Suppliers. The Company is listed on Euronext Lisbon since 1995, and has a Market Capitalization of approximately € 3 billion. The major Shareholder is Semapa SGPS, with ownership of 69,35%, from what 35,68% is direct ownership and 33,67% is indirect ownership through its subsidiary SEINPAR." (Appendix 15). The ultimate owner of The Navigator Company is SODIM (Appendix 14).

Having in account the Valuation performed we Recommend to Hold The Navigator Shares. The Valuation through Discount Cash Flow Approach resulted in an upside potential of 13,94%, but the valuation through Multiples Approach resulted in a downside potential of 32,09%, what reveals the challenging Industry where Navigator is operating. However, Navigator operational effectiveness, combined with its innovative and quality products results in competitive advantages and growth opportunities regarding its peers. (GROUP, 2018) Navigator has on average an operational effectiveness higher than its competitor and peers (Figure 23). In the case of the peer companies there is the exception of ENCE ENERGIA Y CELULOSA, SA. with higher EBITDA margin, because it focus on different business segment, namely Pulp and Forestry area.

Navigator is always seeking for new business opportunities, it´s working on becoming more flexible and diversified, so we believe it has a stable future in terms of earnings. The new products developed in 2017 are proof of this innovation politics, namely the Navigator Premium Inkjet, Digital Navigator and Soporset, as well as paper bags, that have a considerable growth potential. (Company, Annual Report 2017, 23-05-2018)

Figure 23 – EBITDA Margin of The Navigator Company and its Peers



6. Valuation

According to Damodaran (1996) there are three basic approaches to valuation: discounted cash flow valuation, relative valuation, and contingent claim valuation. (Damodaran, 1996) Valuation is very importante, since the way the company estimates value is "a critical determinant of how it allocates resources" (Luehrman, 1997) Luerhman defends that Valuation is a function of three vital factors: cash, timing and risk. Adding to this Berk & DeMarzo (2014) defend that to discuss Valuation we have to understand risk, return and capital structure of the firm.

There are several approaches to Valuation, but in this paper we will focus in Intrinsic Valuation, that assesses the value of an asset based on the present value of it´s expected future cash-flows – **Discounted Cash Flow Valuation**. In order to complement and solidify the results we will also perform **Relative Valuation** that estimates the value of assets by taking in account the value of comparable assets.

The three major methods for capital budgeting, that can produce estimates for a firm or investment value, in a world with market imperfections and leverage, are the Weighted Average Cost of Capital (WACC), the Adjusted Present Value (APV) and the Flow-to-Equity (FTE) method. The best melthod to use depeds on the firm´s financing policy.

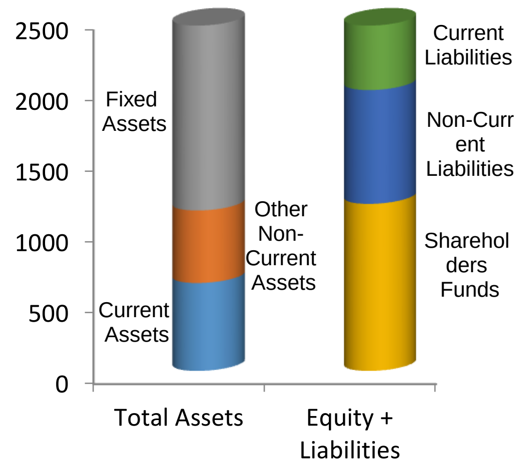
Debt financing generates a helpful interest tax shield for the company, since interest payments are deducted as an expense. In the WACC method the unlevered free cash-flows are discounted applying the weighted average cost of capital, and this method already incorporates the tax benefit in the WACC rate since the cost of debt used is the effective after-tax interest rate. In the Adjusted Present Value (APV) the unlevered free cash flows are discounted using the unlevered cost of capital, and then the present value of the interest tax shield from debt is separately estimated and added to obtain the present value of the company. The Flow-to-Equity method values the firm equity based on the total payouts to shareholders.

Discounted Cash Flow Valuation

The Discounted Cash Flow valuation was the method applied to reach the value of the Company at the moment of valuation, with all the data available until then. Having in account the Capital Structure of the Firm (Figure 24) we can see that Liabilities have a considerable weight on Total Capital, so we will perform a Firm Valuation, instead of Equity Valuation. Having discarted the Flow-to-Equity method, we now should choose between the APV and the WACC method. Considering the increasing weight of Net Debt (Figure 25) the method choosed is the **APV**.

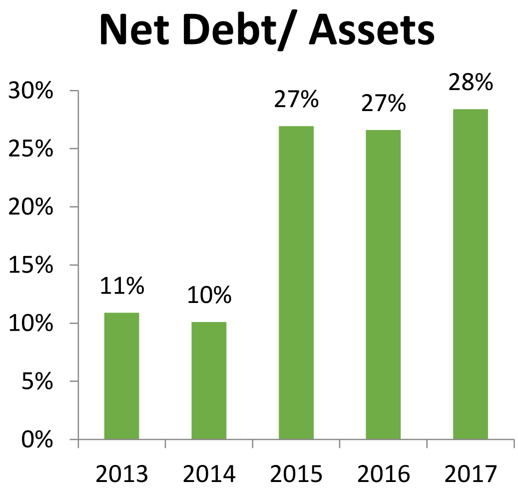
We used the last 5 years available with real historical data, in this case from 2013 to 2017, jointly with macroeconomic and industry data, to make the necessary assumptions about the financial values and Free Cash Flows of the next five years, the valuation period. In this case the valuation period is between 2018 and 2022, and this last year will provide the terminal value of the valuation, the perpetuity (Appendix 1 – Appendix 11).

Figure 24 - Capital Structure of The Navigator Company, S.A. in 2017



Source: Company Data

Figure 25 – Evolution of Net Debt/ Assets



Source: Company Data

6.1. Assumptions for the Forecasted Period

6.1.1. <u>Revenues</u>

Table 8 – Revenue Assumptions

	2018 F	2019 F	2020 F	2021 F	2022 F
UWF Paper	0,1%	0,0%	-1,0%	0,0%	0,0%
Pulp	5,0%	5,0%	6,0%	1,5%	1,5%
Tissue	4,0%	3,5%	3,0%	1,5%	1,5%
Energy	6,0%	7,0%	7,0%	1,5%	1,5%
Others	0,0%	0,0%	3,0%	1,5%	1,5%
Unallocated/ Eliminations	0,0%	0,0%	0,0%	1,5%	1,5%

Despite the declining market for Graphic Paper, we believe that the company sales will not suffer a sharp decrease in the **UWF Paper Business Segment**, and The Company will be able to maintain its profitability considering it´s exceptionally efficient paper operations, and having in account the early increase in Paper Prices in 2018, and the leading position of The Navigator in the premium sector in Europe (49% Market Sahre), it´s main market. Having this in mind, we expect a modest growth of 0,1% in the UWF Paper Segment revenues in 2018, a stabilization in 2019 with 0% growth and a decline of -1% in 2020. In 2021 and 2022 we expect the sales of UWF to remain the same with 0% growth (Figure 26). (Ved & Menjivar, 2018)

Having in account the increase in **Pulp** Capacity at the Figueira da Foz Industrial Complex, and the increase in Pulp price and demand, we expect the sales of The Navigator Complany regarding the Pulp segment to increase by 5% in 2018 and 2019, and by 6% in 2020. In 2021 and 2022 we assume a growth of 1,5%, that corresponds to the 2022 GDP growth of Developed Economies, where Portugal and its main customers are included (Figure 27).

Considering the growing **tissue** market, with market in longer term forecasted to grow around 3% per year, we assumed a growth of 4,0% in 2018, 3,5% in 2019 and 3,00% in 2021. In 2021 and 2022, the growth assumed was the GDP of developed economies: 1,5% (Figure 28).

The **energy** business had a good performance in 2017 due to rising Brent prices, to which power prices are indexed. We do not expect Brent prices to fall, but to slowly increase over the long term due to the saturation of supply. Adding to this, the renewable sources are gaining strength in the electricity mix, so we expect a 6% increase in sale of energy in 2018, and 7% in 2019 and 2020. The growth for the last two forecasted years is assumed as 1,5%. **Others** in the Table 8 is referring mainly to the Forestry business segment,and is expected to remain the same in 2018 and 2019 and increase 3% in 2020 due to the plantation in Mozambique. The **Unallocated/Eliminations** is expected to remain the same in the first three years and growth with GDP 1,5% in 2021 and 2022. In the Income Statement this three last headings are under the account "Others + Unallocated/Eliminations" (Appendix 1 and 2). Globally, the growth of revenues was as shown in Fig. 29.

Figure 26 – UWF Paper Sales (Million €)

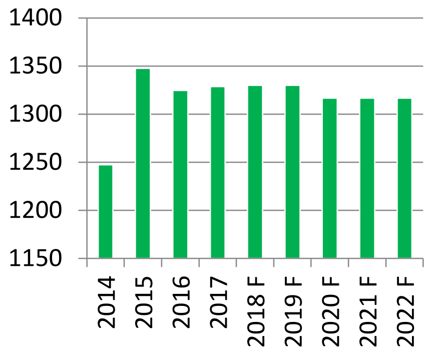


Figure 27 – Pulp Sales (Million €)

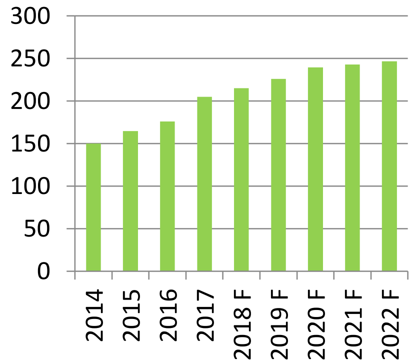


Figure 28 – Tissue Sales (Million €)

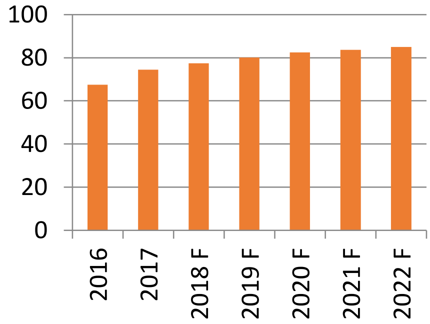
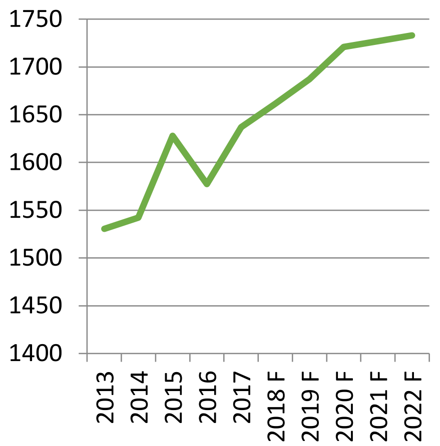


Figure 29 – Evolution of Revenues (Million €)



6.1.2. Operational Costs

The % of Operational Costs over Revenues was assumed as the same in 2017, namely 77,4%, a bit lower than the average percentage of last five years (78,5%) due to the expected continuing effects of the Cost Cutting Program M2.

6.1.3. CapEx

The Capital Expenditures of The Navigator Company are inconstant over the years (Appendix 8), due to the specific investments in new mills and punctual upgrades. In 2018, there were two ongoing new projects, and the Mozambique project, a more long-term investment, so, to forecast more accurately the value of Capital Investments in this year we considered two sources of Capital Investments: the Maintenance CapEx, a current cost related with the maintenance of production capacity, and the CapEx related with the ongoing new investment projects. In this way the estimated CapEx for 2018 was about € 184 million, from what 90 million are related with the project of the new Tissue mill in Cacia, 45 million to the optimization of pulp production in the Figueira da Foz mill, and 10 million to the investment in Mozambique project; This results in € 145 million in new investments, to what will be added the Maintenance CapEx of € 39 million. The Maintenance CapEx is assumed to be 2,35% of the Revenues, a bit higher than the average of the last five years (1,6%) since the production capacity increased in 2015, and is more reasonable to assume a Maintenance CapEx in the values of 2016 – 2017 (Table 9).

Table 9–Maintenance CapEx/ Revenues

	2013	2014	2015	2016	2017	Average	Std. Dev.
Maintenance CapEx/ Revenues	1,1%	0,6%	1,2%	2,4%	2,7%	1,6%	0,9%

According to (Ved & Menjivar, 2018) in 2019 the CapEx would be 100 million €, including 10 million for the Mozambique project. In this case we reached this value by multiplying the average Total Capital Expenditures of last five years over Revenues, namely 5,9%, by the 2019 Revenues. The Capital Expenditure for 2020, 2021 and 2022 was calculated in the same way as 2018, as the sum of new investments, in this case the 10 million € investment in Mozambique, and the Maintenance CapEx, calculated as 2,35% of the Revenues.

These assumptions were in line with the plans of the Company to invest approximately € 500 million in 2018-2022, with investment of about €380 million during 2017-19, that included €120 million in tissue and €85 million in pulp expansion, and €10 million annually in Mozambique project until 2022.

6.1.4. Long-Term Assets

After reaching the value of Capital Investments for the next 5 years, the value of Long-Term Assets was calculated as the Long-Term Assets Initial Value plus the Capital Investment made in the year, subtracted by the Accumulated Depreciations/Amort (Appendix 9). The Accumulated Depreciation/Amortization was calculated by summing the Accumulated Depreciation of the previous year with the value of the Depreciations/Amortizations, Impairment and Provisions of each current year.

6.1.5. Other Equity

The value of all the Equity, with the exception of Net Income Retained and Minority Interests, is reached by subtracting the Dividends of the year to the previous year Other Equity. The Dividends Distribution are in Table 10, where the values of 2018 and 2019 are in accordance with the Proposed Allocation of Results in the 2017 Annual Report of The Company. The value of Dividend Distribution for the year 2020-2022 were calculated as 98,00% of the Net Income of the previous year. This was less than the average percentage of the previous 5 years: 125,9%, but we believe that a Semapa deleveraging (the main Shareholder of The Company, that relies on its dividends to pay its own Debt), will allow an ease in the Payout Rate by The Navigator Company, S.A., having also in account its CapEx Spenditures.

Table 10 – Dividend Distribution (Million €)

	2018 F	2019 F	2020 F	2021 F	2022 F
Dividends	250, 01	170, 00	215, 52	224, 98	228, 65

6.1.6. Net Working Capital (NWC)

Concerning to net working capital (Appendix 10), we verified that the current assets and current liabilities proportion over sales is not constant, so we assumed that in the future the proportion over Sales will be the same as in 2017.(Appendix 10)

6.1.7. Net Debt

Relative to Net Debt we assumed that in 2018, a year of high Capital Investments, the Long-term and Short-term debt would be calculated through the average percentage of Debt to Revenues from 2013 to 2017, respectively 40,85% of Revenues for Long-term debt and 7,95% of Revenues for short-term debt. After that, The Company will start by decreasing the levels of Debt and increasing the use of Cash, resulting in a decreasing Net Debt. In 2019, a year with still some Capital Expenditures, the Long-Term-Debt will be 35,00% of Total Revenues, and after that the level of Long-Term Debt would return to 2014 value, 30,4%, since the Capital Expenditures from 2020-2022 will be similar to 2014. From 2019 to 2022, the Short-Term Debt will be 4,40%. The cash will be increasing due to the proceeds of the sale of the Colombo mil in the USA.

6.2. Discounted Cash Flow Valuation

Through Equiation 1 we reach the Value of the FCFF for each year.

$$1)\ \boldsymbol{FCFF = EBIT(1-t) - CapEx + Depreciations - \Delta NWC}$$

Once we have the FCFF (Table 11), we discount them at the unlevered Cost of Capital.

Table 11 – FCFF in the Explicit and Perpetuity Period

		Explicit Period				Perpetuity
		1	2	3	4	5
	2017	2018E	2019E	2020E	2021E	2022E
(+)EBIT*(1-t)	184 910 986	184 221 999	186 544 083	191 434 782	191 360 527	191 299 237
(+) Depreciation	148 788 454	156 604 880	159 788 456	161 397 547	162 999 644	50 731 183
(-) Change Net Working Capital	40 038 405	2 962 304	3 117 107	4 077 862	731 964	742 943
(-) Capital Expenditure	114 714 693	184 042 571	100 341 231	50 443 919	50 586 482	50 731 183
FCFF	**178 946 342**	**153 822 004**	**242 874 201**	**298 310 549**	**303 041 726**	**190 556 293**

6.2.1. Unlevered Cost of Capital

The unlevered cost of Capital (Ru) is calculated through the following formula:

$$2)\ R_u = R_F + \beta_u \times ERP$$

This formula is based in the CAPM formula (Equation 3) that reflects the return demanded by equityholders given the risk of the investment, through the Return on Equity (R_e).

$$3)\ R_e = R_f + \beta_e * \left[E(R_m) - R_f\right] \quad \text{or} \quad R_e = R_f + \beta * ERP$$

The R_F **(Risk free rate)** was calculated in two different ways, through a Local Bond yield and through a Benchmark Bond yield. The Local Bond yield choosed was the yield to maturity of the Portuguese 10 Year Treasury Bond issued at 25/02/2016 (3,30%), and then to that was subtracted the Portuguese Credit Default according to Aswath Damodaran Jan. 2018 (2,56%). It was also considered the Credit Default Spread based in the Rating/Risk score of Portugal (2,00%). The Benchmark Bond yield chosen was a German 10Y Treasury Bond (BUNDERSREPUB.DTL.NA) of 2015, in the value of 0,10%, to what was added the inflation differential between Germany and Portugal. The value used to the Risk-Free Rate was the mean of the values obtained in these ways, namely 0,59% (Table 12).

To obtain the β_u (Beta unlevered) we used the technique of Bottom-up Beta, where through the Beta levered of the peers of the Navigator Company and their Capital Structure in terms of Debt to Equity, the unlevered Beta of each Peer Company is calculated through Equation 4), and the mean of the unlevered Betas of Peers Companies in the same Industry, will be the unlevered Beta of the Navigator Company. This method was complemented with the historical Beta, where the Beta levered of The Navigator Company was calculated by regressing the rentability of the Navigator stock historical values in the last 5 years against the profitability of the market, in this case the market measure will be the Index PSI 20. This regression will return the levered Beta of the Navigator Company, that is adjusted, and we obtain

Table 12 – Unlevered Cost of Capital

Unlevered Cost of Capital	
Rf	0,59%
beta unlevered	0,83
Risk Premium	6,84%
Ru	**6,27%**

$$4)\ \beta_u = \frac{\beta_l}{1 + (1 - t) \times \frac{D}{E}}$$

the unleverd Beta through equation 4. The mean of the values obtained with this two methods will be the value for the unlevered beta, in this case 0,83.

The **Equity Risk Premium** was obtained having in account the Geographical Distribution of Sales of The Navigator Company, by multiplying the % of Total Revenues that each Country/ Region represented in Total Sales, by the average Equity Risk Premium of each of those Countries/ Regions according to Damodaran, and the final value was 6,84%. (Appendix 11)

With the FCFF and the unlevered Cost of Capital, we discount the FCFF of the Explicit Period by $(1+R_u)^n$ (Table 13)' obtaining the Discounted Value of the Explicit Period.

Table 13 – Discounted Value of the Explicit Period

	Explicit Period				Perpetuity
	1	**2**	**3**	**4**	**5**
FCFF	**153 822 004**	**242 874 201**	**298 310 549**	**303 041 726**	**190 556 293**
$(1+R_u)^n$	1,06	1,13	1,20	1,28	

We then use Equation 5) to get the value of the Perpetuity, the Terminal Value. This is done by dividing the Operational Cash Flow, in this case the FCFF of the year 5 by (*k* - *g*), where *k* is our unleverd Cost of Capital (R_u), ang *g* is the gowth rate in perpetuity, in this case the GDP growth of Developed economies in 2022.

$$\textbf{5)}\ TV_T = \frac{OCF_{T+1}}{k-g}$$

Finally, to get the Enterprise value through the APV method, we add to the Value of Operational Assets obtained through the DCF Valuation, the Value created by Debt and the Liquid Value of Non-Operational Assets (Table 14). Subtracting the Net Debt and Minority Interests we reach our Market Value of Equity – Market Capitalization, that divided by the Nº of Shares will result in the Price Target of our DCF Valuation, in this case 4,845€, that represents and upside potential of 13,94%.

Table 14 – Valuation through DCF and Price Target

(+) Discounted Value of Explicit Period	846 034 029
(+) Perpetuity	3 134 363 204
(+) Debt Value	190 499 770
(+) Other Assets	131 389 048
(-) Other Liabilities	133 116 543
Enterprise Value	**4 169 169 508**
(-) Net Debt	692 726 435
(-) Minority Interests	420 277
Equity Value	**3 476 022 796**
Number of Shares	717 500 000
Price Target	**4,845**
Stock Price 31-12-2017	4,252
Upside Potential	13,94%

6.3. Multiples Valuation

The Peer Companies were chosen between the Competitors, as the most similar to The Navigator Company, having in account Sales, Net Income, Total Assets, Market Capitalization and EBITDA. The companies that matched four or more of these criteria were choosed as Peers (Appendix 13).

The Market Multiples chosen to reach Price Target were Price to Earnings Ratio (PER), Price to Book Value (P/BV), Price to Sales (P/S), Enterprise Value to Sales (EV/Sales) and Enterprise Value to EBITDA (EV/EBITDA).

Each Peer Multiple was calculated as the average of the Multiples from the 4 Peer Companies. According to Table 15 we can see the Price Target reached by each Multiple, and the average Price Target reached according to Multiples was 2,887€, which compared with the Price of the Stock of 4,252€, represents a downside potential of -32,09%.

Table 15 – Multiples Output

Multiples Output	
Multiples	Price Target
PER	3,959
P/BV	2,917
P/S	2,333
EV/Sales	1,838
EV/EBITDA	3,390
Average Price Target - Multiples	**2,887**
Current Price (29-12-2017)	4,252
Downside Potential	-32,09%

Table 16 – PER Multiple Output

PER Multiple	**2018 F**
The Nav. Comp. Earnings per Share	0,30
Peers Multiple - PER (Arithmetic mean)	13,19
Price Target	**3,959**
Equity by Peers	2 840 440 792
Nº of Shares	717 500 000
Current Price (29-12-2017)	4,252
Downside Potential	-6,9%

Table 17 – EV/Sales Multiple Output

EV/ Sales	**2018 F**
The Nav. Comp. Sales	1 661 385 987
Peers Multiple - EV/EBITDA	1,18
The Nav. Comp. EV by peers	1 964 588 930
Net Debt	643 328 976
Minority Interests	2 225 102
Equity Value by Peers	1 319 034 851
Nº of Shares	717 500 000
Price Target	**1,838**
Current Price (29-12-2017)	4,252
Downside Potential	-56,8%

Table 18 – EV/EBITDA Multiple Output

EV/EBITDA	**2018 F**
The Nav. Comp. EBITDA	410 704 189
Peers Multiple - EV/EBITDA	7,50
The Nav. Comp. EV by peers	3 078 227 897
Net Debt	643 328 976
Minority Interests	2 225 102
Equity Value by Peers	2 432 673 819
Nº of Shares	717 500 000
Price Target	**3,390**
Current Price (29-12-2017)	4,252
Downside Potential	-20,3%

7. Financial Analysis

In this section of the paper we will analyze the Financials of The Navigator Company, starting with its recent past, in a way to better understand its present and forecast its future more solidly.

Looking at its evolution in the last five years, from 2013 until 2017, we can see an overall increasing trend in **Sales** (Figure 30). In 2015 the Company recorded the highest figure ever until the date, with an increase of 5.6% relative to 2014, mainly due to the increase in pulp and paper prices caused by the strength of the dollar against the euro. (Portucel S. , 2016) In 2016, Total Turnover decreased from € 1,628 million recorded in 2015, to € 1,577.4 million, due to a drop in the value of energy sales, and the global contraction in pulp and paper price over the course of 2016. These factors were mitigated by the Company through an increase in sales volumes, and an effort to reduce costs. (Company, Consolidated Annual Results for 2016, 2017) Revenues went up 3.8% in 2017, namely from € 1577,4 million of the previous year to 1636,8 million €. This rise was primarily due to the robust performance of pulp, power and tissue. Paper Sales still have a big impact on Revenues, contributing to 73% of turnover in 2017, which is, however, 0.9% below 2016 (-8.6 thousand tons). We can see in Figure 31 the Division of Revenues by Business Area, where "Others" include sales of pellets directed at Europe.

Figure 30 – Revenues (Total Sales n €Million)

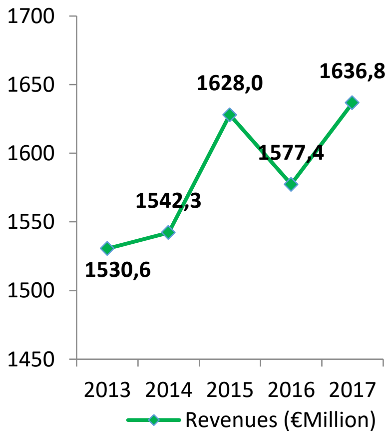
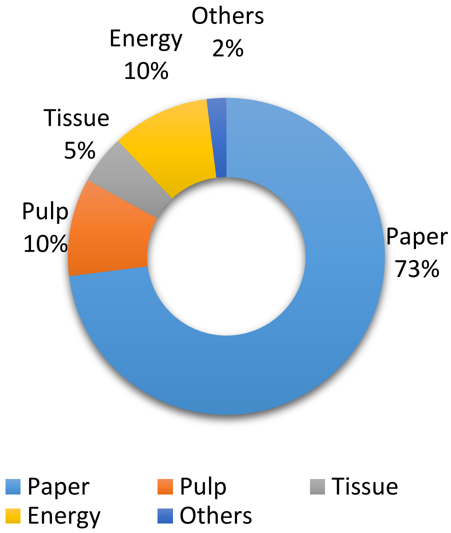


Figure 31 – % of Revenues by Business Area



2017 was a year of supply down and high demand for **pulp**, what resulted in an increase in prices in the benchmark index PIX – BHKP. Following these events, Navigator´s volume of Pulp Sales grew in the order of 7% to 311 thousand tons, and the Group´s average price took an ascending course rising 12% over the year, what resulted in a growth of 19% in the value of pulp sales, to a total of € 164 million. (The Navigator Company, 2018)

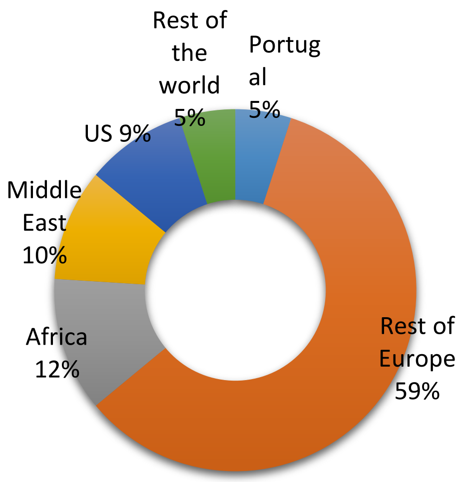
Global demand for **UWF paper** increased around 0.2%, particularly in China. In Europe, apparent consumption remained relatively constant (up 0.1%) with demand decreasing for reels, and rising for Folio and Cutsize. In 2017 the Group sold 1578 thousand tons of UWF, approximately the same amount of the previous year, although slightly less. It also improved the product mix in terms of quality (premium sales grew 57 thousand tons) and its own brands. Navigator´s average sales price in 2017 end up practically the same as in 2016, despite 4 price rises implemented by the Group. This was explained by the depreciation EURUSD and EURGBP exchange rates, the evolving market mix, and also due to the decrease of average prices in PIX A4, the price index for Europe, being 815€/ton in 2017 as compared to 824€/ton in 2016. (The Navigator Company, 2018)

In 2017 competition in the **Tissue** market increased in the Iberian Peninsula, and production costs raised due to the increase in pulp prices, however, demand for tissue grew, influenced by economic growth. The Navigator Company was able to increase production of reels and finished products, fueled by the expansion in capacity at the Vila Velha de Rodão mill in 2015, after its acquisition. This resulted in the increase of volume of sales in 9% for the Company in 2017, comparing to the previous year, what combined with an increase of the average sales price of 1.4% lead to in an increase in value of sales of 10.3%, in this way, sales of Tissue totaled € 74.4 million in 2017. (The Navigator Company, 2018)

The Navigator Company total gross power output in 2017 was 5% higher, compared to the previous year. **Energy** sales grew 13% in value, comparing to 2016, once the power generation assets were mainly operational, what did not fully happened in 2016 with a stoppage and a breakdown in turbo-generators of cogeneration plants. Besides that, in 2017 the power sales from the natural gas combined-cycle power station benefited from an accentuated increase in Brent prices. (The Navigator Company, 2018)

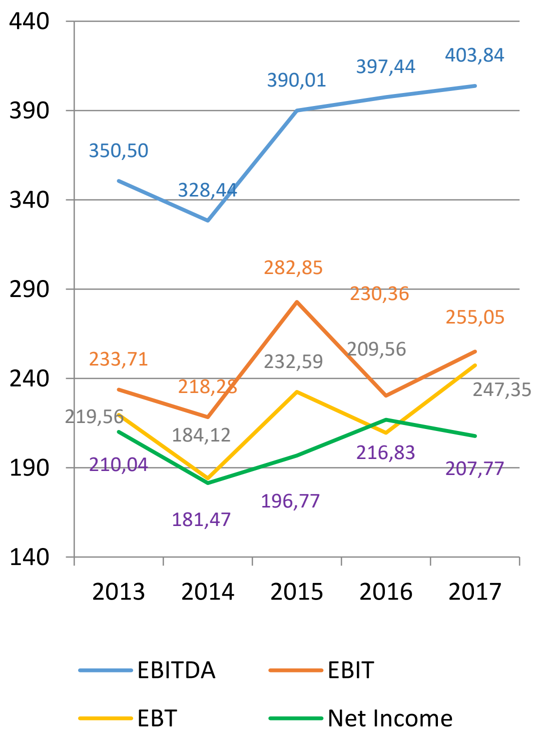
All energy sales are in Portugal; By other hand, The Navigator Company exports approximately 95% of pulp and paper sales (Figure 32). Having a turnover of approximately € 1.6 billion, about 95% of Navigator's pulp and paper products are sold outside Portugal and shipped to approximately 130 countries. The main markets for the Company are Europe (64%), Africa (12%), the Middle East (10%) and North America (around 10%). (Company, Annual Report 2017, 2018)

Figure 32 – Geographic Distribution of Revenues of Pulp and Paper, in 2017



EBITDA has been following an overall increasing trend since 2013 (Figure 33), with the exception of 2014 where it suffered a decrease of 6% relatively to previous year, mainly due to reduction in prices of pulp and paper. (Portucel, 2015) It recovered in 2015 with a notorious increase of 19%; 2015 was the year with the highest figure ever recorded of sales, due to the increase in pulp and paper prices, backed by the strength of the dollar against the euro, being that the favorable exchange rate contributed to the significantly growth of exports. Additionally, the start-up of new pulp capacity in Cacia allowed for 20% increase in annual output of pulp, and the entrance into the tissue segment by acquiring and integrating AMS - BR Star in Vila Velha de Rodão contributed positively to sales. The M2 Cust cutting programme, together with the increase of wood purchases from Portuguese suppliers, reducing raw materials costs also impacted positively EBITDA. These factors contributed to increase EBITDA, despite the reduction of 16.1% in power sales to the national grid, the personnel costs rise of around € 34,2 million, the negative figure relative to investment in Mozambique project and the new pellets project in the United States, as well as the negative impact of € 3.8 million from the anti-dumping tax in the United States. (Portucel S. , 2016)

Figure 33 – Evolution of EBITDA, EBIT, EBT and Net Income (€ Million)



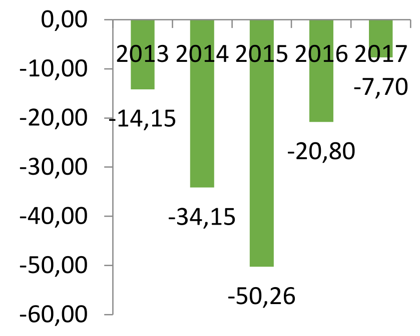
In 2017, the first year of operation, the new mill of pellets in the United States, Colombo Inc. achieved a sales value of € 15 million, however, this value and the future perspective of the business did not seemed enough to compensate the investment. The mill found itself in a very tough market environment, having several problems in the production and marketing of pellets, what eventually lead to a negative impact in the Group´s EBITDA of € 16 million. Despite the negative impact of Colombo, as well as other one-off factors, The Navigator Company´s EBITDA still grew almost 2% between 2016 and 2017, from 397.4 million to € 403.8 million, and

EBITDA/Sales margin remained at 25%. In what concerns recurrent factors, the Group had a reduction in variable production costs, mainly with wood, logistical and packaging costs. In fixed costs, the Payroll costs increased € 11,5 million, from € 144,5 million in 2016, to € 156 million in 2017, in part due to the new businesses (Tissue and Colombo). The program M2 (“Mais e Melhor”), a Cost cutting programme, designed to improve operational efficiency through sustained reduction in costs, was launched in 2014 and had a positive impact in 2017 EBITDA´s estimated in € 27 million.

Analyzng Figure 33 we can see that EBIT follows the same behavior as EBITDA with the exception of 2016, where EBITDA slightly increases and EBIT decreases. This was related with the impairment recognition in 2016 of € 48,9 million related to Mozambique, what influenced the heading “Depreciations, Amortizations and Impairment Losses” to increased significantly from 2015 to 2016, and Provisions heading.

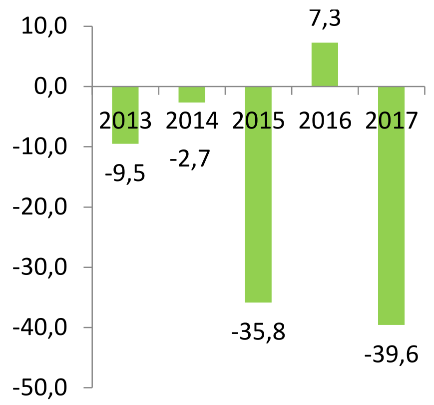
EBIT and EBT are both higher in 2017, regarding the previous year, and they come closer in 2017, because Financial Results in 2017 significantly improve, reducing from the value of € 21 million in Financial Expenses in 2016 to € 8 million in 2017, due to lower cost of borrowing and net gains on currency hedging (Figure 34).

Figure 34 – Net Financial Results (€M))



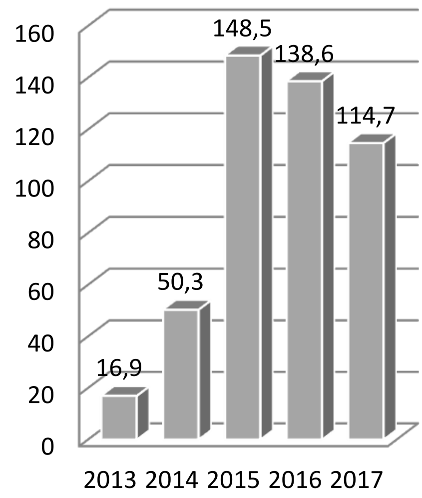
Despite EBT being higher in 2017, Net Income reduced from € 216,83 M in 2016 to € 207,77 M in 2017. This was due to the fact that the Income Tax in 2016 had a positive tax value of € 7 million, influenced by the reversal of tax provisions and the effect of the extraordinary tax revaluation regime (Figure 35); In 2017 the Income Tax had a negative value of about € 40 million.

Figure 35 – Evolution of Income Tax (€ M)



The Company is currently and hereafter, investing heavily in acquisition of fixed production assets (Figure 36). 2015 was a year of big investments for the Group, with CapEx growing approximately € 98 Million, from the € 50,3 million in 2014 to € 148,5 Million in 2015. This value included € 62 million on pulp and paper business (with € 42 million linked to the expansion of pulp capacity at Cacia), € 36 million on expanding tissue capacity at the new mill of the Group in Vila Velha de Ródão, € 18 million on the project in Mozambique and €32 million on the construction of the Pellets mill in the United States. (Company, Annual Report 2015, 2016) In 2016 Investment reached € 138,6 million, including € 38 million in pulp, paper and Tissue business, and Euros 81.6 million in Colombo factory in the United States. For the project in Mozambique it was invested around € 18 million in fixed and biological assets. (Company, Consolidated Annual Results for 2016, 2017) In 2017 The Navigator Company´s Capital Expenditure accounted for approximately € 115 million. Of this figure about € 41 million was dedicated to recurrent investments in pulp and paper activity, and € 4 million in tissue operations and others. The other big part of this investment was related with two CapEx projects initiated, namely the construction of a new tissue mill in Cacia, and the optimization on pulp production efficiency and environmental performance at the Figueira da Foz mill. These projects accounted for roughly € 70 million on 2017, with € 30 million for the Tissue segment

Figure 36 – Capital Expenditures (€ M)



in Cacia, and € 40 million in the expansion of capacity at Figueira da Foz. The projects refered will continue into 2018, representing a total investment of approximately € 205 million, with the project in Cacia accounting for around € 120 million, and in Figueira da Foz for € 85 million. Having € 70 million already being spent, it is expected to be invested in 2018 more € 90 million in the Tissue segment in Cacia, and € 45 million in becoming Figueira da Foz industrial unit more competitive. (The Navigator Company, 2018)

The Navigator Company took an attractive opportunity to divest the Pellets Business in US, reaching an agreement to sell the Colombo mil for USD 135 million, to Enviva Holdings. (The Navigator Company, 2018) Since the investment made for the construction and operationalization of the pellets business was around USD 120 million, the value of sale agreed will recover the investment made. Moody´s Investor Service believes that the capital received can be reinvested by the Company in the pulp and tissue business, were the Company has more competitive advantages, and has a more reliable/ steadier demand, compared to the paper business. It is expected that the Company will continue to invest above its "maintenance capex needs of €30 to €40 million annually to diversify beyond paper". (Fujerik, 2018)

In the end of 2017, the Group´s Net Debt was of € 692,7 million (Figure 37), roughly more € 53 million than in 2016, being this increase mainly related with the payment of dividends of € 250 million in June and July, and the CapEx projects in development. The Net Debt/EBITDA ratio is 1,72×, which is high, but still at a comfortable level. Credit rating of Navigator`s long term debt is BB according to S&P, and Ba2 in Moody´s rating with a stable outlook.

In terms of **Dividends**, Navigator maintains a policy of rewarding shareholders with continuous dividends throughout the years. In 2015 the value was substantially higher compared with other years due to an anticipation of a dividend relative to 2016, that if adjusted would result in a value of 0,43€ p/share in 2015 and 0,42 € p/share in 2016. In total the company dispended € 170 million in dividends in 2016, and € 250 million in 2017 (Figure 38).

The **Equity Ratio** of The Navigator Company revolves around 50%, what means that roughly half of the assets of the Company are financed with Equity and half with Debt. Only in 2017 Equity is below 50% of Total Assets, meaning that Debt is relatively higher.

Figure 37 – Net Debt (€M) and Net Debt/EBITDA

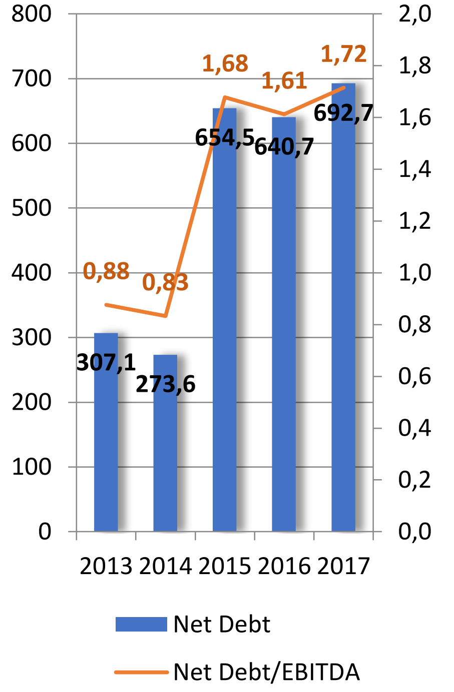
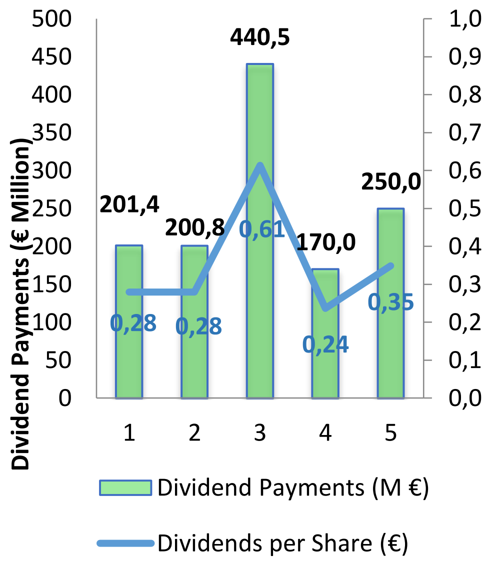
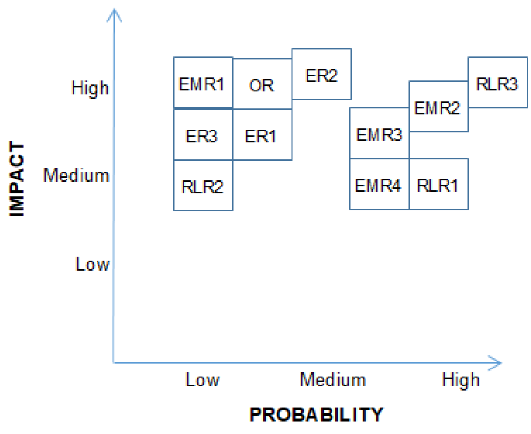


Figure 38 – Dividends Policy History



8. Investment Risks

Figure 39 – Investment Risks Matrix



8.1. Economic and Market Risks

Fast decline in the UWF Paper Market (EMR1)

There is the significative risk of decrease in paper demand because of technological substitution. The Company is leader in this still very profitable market, and is working to decrease its exposure to the Paper Market by diversifying to other areas, but it is currently still very exposed with the possibility of significative diversification more in the long term. If the market declines faster than expected, it would have tremendous negative effect on the Navigator sales, however that is not probable.

Foreign Exchange Rate Variation Risk (EMR 2)

The variation in exchange rates, mainly between Euro and Dollar, can affect both the values of sales (Revenues), and purchases (Costs).

Variations in paper and pulp prices (EMR 3)

The paper and pulp prices fluctuate a lot, which can have positive or negative outcomes for The Group.

Changes in energy prices (EMR 4)

Brent Prices influences Power sale prices from Gas cogeneration plant.

8.2. Regulatory and Legal Risks

Legal restrictions on paper transactions in foreign currencies (RLR 1)

Risk of restrains and increase of cost on paper imports from foreign countries, through the raise of customs barriers, or in paper exports, through, for example, the anti-dumping duties in US.

Restriction of Energy competitiveness due to regulatory issues (RLR 2)

There is the risk of a volatile energy sector in terms of regulation, with the possible outcome of less competitive conditions for power sales.

Legal restrictions on forestry activities (RLR 3)

Risk of legal restrictions being institute on forestry production. Navigator is concerned at the Government’s intention to approve new legislation for the forestry sector which prohibits the plantation of new areas with eucalyptus, permitting plantations in new areas only on the basis of swaps with existing plantations in marginal and low-yield areas. This may result in a cutback in raw material production and consequently increase in acquisition costs.

8.3. Operational Risks

Shortage of Wood Supplies (OR1)

The possibility of problems in wood supplies can affect seriously the production, and increase costs. Even because there is an additional difficulty to obtain certified wood, and this prerequisite of the raw material is essencial to the value and quality of the final product. Also, a possible increase in demand for wood would trigger an increase in wood prices and, in that way, an increase in production costs.

Increase in logistical costs (OR2)

The risk of increase in transportation costs, that can cut profitability margins, and force the raise of prices to customers.

Industrial accidents at work (OR3)

Risks of accidents at work that could lead to injuries or incapacities.

Industrial Units breakdowns (OR4)

Risk of prang in machinery and failures in production units, leading to significative increase of costs, as well as cut of revenues.

8.4. Environmental Risks

Forest damage (ER1)

This risk can result from natural or man-made causes, and implies the destruction of the raw material needed for the Group's activities with the consequence of increased costs or loss of revenues.

Occurrence of natural disasters (ER2)

Risk of natural disasters, mainly fires, that can result in personal injuries, and/or loss of assets.

Environmental impacts of forestry activities (ER3)

Risk of affecting the environment, the local society and the business community, due to irrational use of natural resources.

9. Appendices

9.1. Appendix 1 - Income Statement in € Million

Income Statement (€M)	2013	2014	2015	2016	2017	2018 F	2019 F	2020 F	2021 F	2022 F
Sales and Services	1530,61	1542,28	1628,02	1577,39	1636,83	1661,39	1687,22	1721,02	1727,08	1733,24
Pulp Market	*163,41*	*150,08*	*164,77*	*175,87*	*204,92*	*215,16*	*225,92*	*239,48*	*243,07*	*246,72*
UWF Paper	*1218,20*	*1247,27*	*1347,59*	*1324,55*	*1328,55*	*1329,88*	*1329,88*	*1316,58*	*1316,58*	*1316,58*
Tissue Paper				*67,45*	*74,39*	*77,36*	*80,07*	*82,47*	*83,71*	*84,96*
Others + Unallocated/Eliminations	*149,00*	*144,93*	*115,66*	*9,52*	*28,98*	*38,98*	*51,35*	*82,48*	*83,72*	*84,98*
Other Operating Income	18,82	31,06	26,21	41,52	30,03	30,97	31,45	32,08	32,19	32,31
Change in fair value of biol. assets	2,28	2,63	3,03	8,62	3,78	4,26	4,33	4,42	4,43	4,45
Change in fair value of financ. invest.	0,14	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Operational Costs	-1201,36	-1247,53	-1267,25	-1230,08	-1266,81	-1285,91	-1305,91	-1332,07	-1336,76	-1341,53
EBITDA	**350,50**	**328,44**	**390,01**	**397,44**	**403,84**	**410,70**	**417,09**	**425,45**	**426,95**	**428,47**
EBITDA margin	22,9%	21,3%	24,0%	25,2%	24,7%	24,7%	24,7%	24,7%	24,7%	24,7%
Provisions	-13,96	1,34	14,56	-0,42	-4,08	-0,69	-0,70	-0,71	-0,72	-0,72
Depreciation, Amort. and Imp. losses	-102,82	-111,50	-121,72	-166,66	-144,70	-155,92	-159,09	-160,68	-162,28	-163,89
EBIT	**233,71**	**218,28**	**282,85**	**230,36**	**255,05**	**254,10**	**257,30**	**264,05**	**263,95**	**263,86**
EBIT margin	*15,3%*	*14,2%*	*17,4%*	*14,6%*	*15,6%*	*15,3%*	*15,3%*	*15,3%*	*15,3%*	*15,2%*
Net Financial Results	-14,15	-34,15	-50,26	-20,80	-7,70	-23,14	-21,49	-17,88	-13,76	-9,74
Profit Before tax (EBT)	**219,56**	**184,12**	**232,59**	**209,56**	**247,35**	**230,96**	**235,81**	**246,17**	**250,19**	**254,13**
Income Tax	-9,52	-2,65	-35,83	7,27	-39,58	-15,57	-15,90	-16,60	-16,87	-17,14
Non-Controlling Interests	-0,01	0,00	0,36	-0,67	0,00	0,00	0,00	0,00	0,00	0,00
Net Income	**210,04**	**181,47**	**196,40**	**217,50**	**207,77**	**215,39**	**219,91**	**229,57**	**233,32**	**236,99**

9.2. Appendix 2 – Common Size Income Statement

Common Size Income Statement	2013	2014	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Sales and Services	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Pulp Market	*10,7%*	*9,7%*	*10,1%*	*11,1%*	*12,5%*	*13,0%*	*13,4%*	*13,9%*	*14,1%*	*14,2%*
UWF Paper	*79,6%*	*80,9%*	*82,8%*	*84,0%*	*81,2%*	*80,0%*	*78,8%*	*76,5%*	*76,2%*	*76,0%*
Tissue Paper	*0,0%*	*0,0%*	*0,0%*	*4,3%*	*4,5%*	*4,7%*	*4,7%*	*4,8%*	*4,8%*	*4,9%*
Others + Unallocated/Eliminations	*9,7%*	*9,4%*	*7,1%*	*0,6%*	*1,8%*	*2,3%*	*3,0%*	*4,8%*	*4,8%*	*4,9%*
Other Operating Income	1,2%	2,0%	1,6%	2,6%	1,8%	1,9%	1,9%	1,9%	1,9%	1,9%
Change in the fair value of biological assets	0,1%	0,2%	0,2%	0,5%	0,2%	0,3%	0,3%	0,3%	0,3%	0,3%
Change in the fair value of financial invest.	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Costs	-78,5%	-80,9%	-77,8%	-78,0%	-77,4%	-77,4%	-77,4%	-77,4%	-77,4%	-77,4%
EBITDA Margin	**22,9%**	**21,3%**	**24,0%**	**25,2%**	**24,7%**	**24,7%**	**24,7%**	**24,7%**	**24,7%**	**24,7%**
Provisions	-0,9%	0,1%	0,9%	0,0%	-0,2%	0,0%	0,0%	0,0%	0,0%	0,0%
Depreciation, Amort. and Impairm. losses	-6,7%	-7,2%	-7,5%	-10,6%	-8,8%	-9,4%	-9,4%	-9,3%	-9,4%	-9,5%
EBIT Margin	**15,3%**	**14,2%**	**17,4%**	**14,6%**	**15,6%**	**15,3%**	**15,3%**	**15,3%**	**15,3%**	**15,2%**
Net Financial Results	-0,9%	-2,2%	-3,1%	-1,3%	-0,5%	-1,4%	-1,3%	-1,0%	-0,8%	-0,6%
Profit Before tax (EBT)	14,3%	11,9%	14,3%	13,3%	15,1%	13,9%	14,0%	14,3%	14,5%	14,7%
Income Tax	-0,6%	-0,2%	-2,2%	0,5%	-2,4%	-0,9%	-0,9%	-1,0%	-1,0%	-1,0%
Non-Controlling Interests	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Net Income Margin	**13,7%**	**11,8%**	**12,1%**	**13,8%**	**12,7%**	**13,0%**	**13,0%**	**13,3%**	**13,5%**	**13,7%**

9.3. Appendix 3 – Income Statement Assumptions

Income Statement Assumptions						
	2018E	**2019E**	**2020E**	**2021E**	**2022E**	**Assumption**
Sales and Services	1,5%	1,6%	2,0%	0,4%	0,4%	Growth of Revenues - See Valuation Section: Revenues Assumptions
Pulp Market	*5,0%*	*5,0%*	*6,0%*	*1,5%*	*1,5%*	
UWF Paper	*0,1%*	*0,0%*	*-1,0%*	*0,0%*	*0,0%*	
Tissue Paper	*4,0%*	*3,5%*	*3,0%*	*1,5%*	*1,5%*	
Energy	*6,0%*	*7%*	*7%*	*1,5%*	*1,5%*	
Others	*0,0%*	*0%*	*3%*	*1,5%*	*1,5%*	
Unallocated/Eliminations	0,0%	0%	0%	1,5%	1,5%	
Other Operating Income	1,9%	1,9%	1,9%	1,9%	1,9%	Average Percentage of Total Revenues from 2013 to 2017
Change in the fair value of biological assets	0,3%	0,3%	0,3%	0,3%	0,3%	Average Percentage of Total Revenues from 2013 to 2017
Change in the fair value of financial invest.	0,00	0,00	0,00	0,00	0,00	Equal to the value from 2014 to 2017: Zero
Operational Costs	77,4%	77,4%	77,4%	77,4%	77,4%	Equal to the Percentage of Total Revenues in 2017
Depreciation, Amort. and Impairm. losses	3,2%	3,2%	3,2%	3,2%	3,2%	Average Depreciation Rate from 2013-2017 multiplied by the value of Long-Term Assets - See Valuation: CapEx
Net Financial Results	3,34%	3,34%	3,34%	3,34%	3,34%	Cost of Debt multiplied by Net Debt
Income Tax	-6,7%	-6,7%	-6,7%	-6,7%	-6,7%	Average Effective Rate from 2013 to 2017

9.4. Appendix 4 – Original Consolidated Balance Sheet in € Million

Consolidated Balance Sheet (€ M)	2013	2014	2015	2016	2017
ASSETS					
Non-Current Assets	**1 838,59**	**1 768,14**	**1 871,66**	**1 847,20**	**1 726,99**
Goodwill	376,76	376,76	377,34	377,34	377,34
Other Intangible Assets	3,35	3,42	4,93	4,30	3,88
Property, plant and equipment	1 316,19	1 250,35	1 320,80	1 294,98	1 171,13
Investment properties	0,00	0,00	0,43	0,43	0,10
Biological Assets	111,34	113,97	117,00	125,61	129,40
Other Financial Assets	0,00	0,00	0,23	0,26	0,42
Available -for-sale financial assets	0,23	0,23	0,00	0,08	0,00
Deferred tax assets	30,73	23,42	50,93	44,20	44,73
Current Assets	**981,08**	**940,15**	**558,23**	**561,93**	**625,91**
Inventories	202,93	188,86	212,55	208,89	187,80
Receivables and other current assets	200,81	188,81	215,37	215,88	237,70
State and other public entities	53,05	62,93	57,64	69,62	75,08
Cash and cash equivalents	524,29	499,55	72,66	67,54	125,33
Non-Current Assets held of sale	**0,00**	**0,00**	**0,00**	**0,00**	**86,24**
TOTAL ASSETS	**2 819,67**	**2 708,29**	**2 429,88**	**2 409,13**	**2 439,14**
EQUITY AND LIABILITIES					
Share Capital	767,50	767,50	767,50	717,50	500,00
Treasury shares	-94,31	-96,97	-96,97	-1,00	-1,00
Fair value reserves	0,21	-2,33	-1,87	-7,57	-3,02
Other reserves/ Other Reserve	75,27	83,64	91,78	99,71	109,79
Currency translation reserves	-1,30	0,72	5,69	-0,78	-13,97
Free Reserves	0,00	0,00	0,00	0,00	217,50
Retained earnings	522,17	519,40	273,08	205,64	167,39
Net profit for the period	210,04	181,47	196,40	217,50	207,77
Dividends paid in advance	0,00	0,00	-29,97	0,00	0,00
Non-controlling interests	0,24	0,24	8,62	2,27	0,42
TOTAL EQUITY	**1 479,83**	**1 453,66**	**1 214,26**	**1 233,27**	**1 184,88**
Non-Current Liabilities	**966,49**	**644,05**	**872,61**	**769,23**	**800,97**
Deferred taxes and liabilities	99,28	95,89	88,30	59,86	83,02
Liability for defined benefits	0,00	0,00	0,00	6,46	5,09
Provisions	49,32	41,15	59,21	31,05	19,54
Interest-bearing liabilities (Long-term debt)	771,63	468,46	686,57	638,56	667,85
Other non-current liabilities	46,26	38,55	38,54	33,30	25,47
Current liabilities	**373,35**	**610,58**	**343,01**	**406,63**	**453,29**
Interest-bearing liabilities (Short-term debt)	59,70	304,74	40,58	69,70	150,21
Payables and other current liabilities	201,05	211,92	225,08	255,83	259,51
State and other public entities	112,60	93,92	77,35	81,10	43,57
TOTAL LIABILITIES	**1 339,84**	**1 254,63**	**1 215,62**	**1 175,86**	**1 254,26**
TOTAL EQUITY AND LIABILITIES	**2 819,67**	**2 708,29**	**2 429,88**	**2 409,13**	**2 439,14**

9.5. Appendix 5 – Adjusted Balance Sheet in € Million

Adjusted Balance Sheet (€M)	2013	2014	2015	2016	2017	2018 F	2019 F	2020 F	2021 F	2022 F
Non-Current Assets	**1 838,59**	**1 768,14**	**1 871,66**	**1 847,20**	**1 813,23**	**1 767,59**	**1 709,05**	**1 599,28**	**1 487,08**	**1 373,42**
Long-Term Assets	1 807,63	1 744,49	1 820,49	1 802,66	1 681,84	1 709,28	1 649,83	1 538,88	1 426,46	1 312,59
Other Assets	30,96	23,65	51,16	44,54	131,39	58,31	59,22	60,40	60,62	60,83
Current Assets	**981,08**	**940,15**	**558,23**	**561,93**	**625,91**	**675,48**	**645,86**	**713,19**	**837,61**	**963,55**
Inventories	202,93	188,86	212,55	208,89	187,80	190,61	193,58	197,45	198,15	198,86
Receivables and other current assets	200,81	188,81	215,37	215,88	237,70	241,27	245,02	249,93	250,81	251,70
State and other public entities	53	63	58	70	75	76,20	77,39	78,94	79,22	79,50
Cash and Cash Equivalents	524,29	499,55	72,66	67,54	125,33	167,40	129,87	186,87	309,43	433,49
Total Assets	**2 819,67**	**2 708,29**	**2 429,88**	**2 409,13**	**2 439,14**	**2 443,07**	**2 354,90**	**2 312,47**	**2 324,69**	**2 336,97**
Equity	**1 479,83**	**1 453,66**	**1 214,26**	**1 233,27**	**1 184,88**	**1 152,07**	**1 202,07**	**1 216,16**	**1 224,51**	**1 232,87**
Other Equity	1 269,55	1 271,96	1 009,24	1 013,50	976,69	934,45	979,84	984,24	988,83	993,49
Net Income	210,04	181,47	196,40	217,50	207,77	**215,39**	**219,91**	**229,57**	**233,32**	**236,99**
Non-Controlling interests	0,24	0,24	8,62	2,27	0,42	**2,23**	**2,32**	**2,35**	**2,37**	**2,38**
Non-Current Liabilities	**966,49**	**644,05**	**872,61**	**769,23**	**800,97**	**851,30**	**765,86**	**701,60**	**704,07**	**706,58**
Other Non-Current Liabilities	194,86	175,59	186,04	130,67	133,12	172,65	175,33	178,85	179,48	180,12
Interest-bearing liabilities	771,63	468,46	686,57	638,56	667,85	678,65	590,53	522,75	524,59	526,46
Current liabilities	**373,35**	**610,58**	**343,01**	**406,63**	**453,29**	**439,70**	**386,97**	**394,72**	**396,11**	**397,52**
Interest-bearing liabilities	59,70	304,74	40,58	69,70	150,21	132,07	74,56	76,05	76,32	76,59
Payables and other current liabilities	201,05	211,92	225,08	255,83	259,51	263,40	267,50	272,86	273,82	274,79
State and other public entities	112,60	93,92	77,35	81,10	43,57	44,23	44,91	45,81	45,97	46,14
Total Liabilities	**1 339,84**	**1 254,63**	**1 215,62**	**1 175,86**	**1 254,26**	**1 291,00**	**1 152,83**	**1 096,31**	**1 100,18**	**1 104,10**
Total Equity and Liabilities	**2 819,67**	**2 708,29**	**2 429,88**	**2 409,13**	**2 439,14**	**2 443,07**	**2 354,90**	**2 312,47**	**2 324,69**	**2 336,97**

Some of the Rubrics of the Original Balance-Sheet are adjusted into more general headlines in this Adjusted Balance Sheet, for practical reasons. In this waty, the following headlines include the below rubrics:

Long-Term Assets	Other Assets	Other Equity	Other Non-Current Liabilities
Goodwill	Other Financial Assets	Share Capital	Deferred taxes and liabilities
Other Intangible Assets	Available -for-sale financial assets	Treasury shares	Liability for defined benefits
Property, plant and equipment	Deferred tax assets	Fair value reserves	Provisions
Investment properties	Non-Current Assets held of sale	Other reserves/ Other Reserve	Other non-current liabilities
Biological Assets		Currency translation reserves	
		Free Reserves	
		Retained earnings	
		Dividends paid in advance	

9.6. Appendix 6 – Common Size Adjusted Balance Sheet

	2013	2014	2015	2016	2017	2018 F	2019 F	2020 F	2021 F	2022 F
Non-Current Assets	**65,21%**	**65,29%**	**77,03%**	**76,68%**	**74,34%**	**72,35%**	**72,57%**	**69,16%**	**63,97%**	**58,77%**
Long-Term Assets	64,11%	64,41%	74,92%	74,83%	68,95%	69,96%	70,06%	66,55%	61,36%	56,17%
Other Assets	1,10%	0,87%	2,11%	1,85%	5,39%	2,39%	2,51%	2,61%	2,61%	2,60%
Current Assets	**34,79%**	**34,71%**	**22,97%**	**23,32%**	**25,66%**	**27,65%**	**27,43%**	**30,84%**	**36,03%**	**41,23%**
Inventories	7,20%	6,97%	8,75%	8,67%	7,70%	7,80%	8,22%	8,54%	8,52%	8,51%
Receivables and other current assets	7,12%	6,97%	8,86%	8,96%	9,75%	9,88%	10,40%	10,81%	10,79%	10,77%
State and other public entities	1,88%	2,32%	2,37%	2,89%	3,08%	3,12%	3,29%	3,41%	3,41%	3,40%
Cash and Cash Equivalents	18,59%	18,45%	2,99%	2,80%	5,14%	6,85%	5,51%	8,08%	13,31%	18,55%
Total Assets	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**
Total Equity	**52,48%**	**53,67%**	**49,97%**	**51,19%**	**48,58%**	**47,16%**	**51,05%**	**52,59%**	**52,67%**	**52,75%**
Other Equity	45,02%	46,97%	41,53%	42,07%	40,04%	38,25%	41,61%	42,56%	42,54%	42,51%
Net Income	7,45%	6,70%	8,08%	9,03%	8,52%	8,82%	9,34%	9,93%	10,04%	10,14%
Non-Controlling interests	0,01%	0,01%	0,35%	0,09%	0,02%	0,09%	0,10%	0,10%	0,10%	0,10%
Non-Current Liabilities	**34,28%**	**23,78%**	**35,91%**	**31,93%**	**32,84%**	**34,85%**	**32,52%**	**30,34%**	**30,29%**	**30,23%**
Other Non-Current Liabilities	6,91%	6,48%	7,66%	5,42%	5,46%	7,07%	7,45%	7,73%	7,72%	7,71%
Interest-bearing liabilities	27,37%	17,30%	28,26%	26,51%	27,38%	27,78%	25,08%	22,61%	22,57%	22,53%
Current liabilities	**13,24%**	**22,54%**	**14,12%**	**16,88%**	**18,58%**	**18,00%**	**16,43%**	**17,07%**	**17,04%**	**17,01%**
Interest-bearing liabilities	2,12%	11,25%	1,67%	2,89%	6,16%	5,41%	3,17%	3,29%	3,28%	3,28%
Payables and other current liabilities	7,13%	7,83%	9,26%	10,62%	10,64%	10,78%	11,36%	11,80%	11,78%	11,76%
State and other public entities	3,99%	3,47%	3,18%	3,37%	1,79%	1,81%	1,91%	1,98%	1,98%	1,97%
Total Liabilities	**47,52%**	**46,33%**	**50,03%**	**48,81%**	**51,42%**	**52,84%**	**48,95%**	**47,41%**	**47,33%**	**47,25%**
Total Equity and Liabilities	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**	**100,00%**

9.7. Appendix 7 – Balance Sheet Assumptions

Balance Sheet Assumptions	2018 F	2019 F	2020 F	2021 F	2022 F	Assumptions
Non-Current Assets						
Long-Term Assets						See Valuation Section: Long-Term Assets
Other Assets	3,50%	3,50%	3,50%	3,50%	3,50%	Average Percentage of Total Revenue from 2013-2017
Current Assets						
Inventories	11,50%	11,50%	11,50%	11,50%	11,50%	Percentage of Total Revenue equal to 2017
Receivables and other current assets	14,50%	14,50%	14,50%	14,50%	14,50%	Percentage of Total Revenue equal to 2017
State and other public entities	4,60%	4,60%	4,60%	4,60%	4,60%	Percentage of Total Revenue equal to 2017
Cash and Cash Equivalents						See Valuation Section: Net Debt
Equity						
Other Equity						See Valuation Section: Other Equity
Net Income						Net Income attributable to the Shareholders of The Company that year (Income Statement Forecast)
Non-Controlling interests	0,20%	0,20%	0,20%	0,20%	0,20%	Average Percentage of Non-Controlling interests over total Equity from 2013-2017
Non-Current Liabilities						
Other Non-Current Liabilities	10,39%	10,39%	10,39%	10,39%	10,39%	Average Percentage of Total Revenue from 2013-2017
Interest-bearing liabilities	40,85%	35,00%	30,40%	30,40%	30,40%	See Valuation Section: Net Debt
Current liabilities						
Interest-bearing liabilities	7,95%	4,40%	4,40%	4,40%	4,40%	See Valuation Section: Net Debt
Payables and other current liabilities	15,85%	15,85%	15,85%	15,85%	15,85%	Percentage of Total Revenue equal to 2017
State and other public entities	2,66%	2,66%	2,66%	2,66%	2,66%	Percentage of Total Revenue equal to 2017

9.8. Appendix 8 – CapEx Forecast

	2013	2014	2015	2016	2017	2018 F	2019 F	2020 F	2021 F	2022 F
Capital Expenditure (€)	**19 292 185**	**50 595 453**	**148 455 971**	**143 030 310**	**114 714 693**	**184 042 571**	**100 341 231**	**50 443 919**	**50 586 482**	**50 731 183**
Maintenance CapEx	19 000 000	10 200 000	20 000 000	38 000 000	45 000 000	39 042 571	39 649 683	40 443 919	40 586 482	40 731 183
New washing press - Setúbal		5 300 000								
Expansion of Pulp Capacity - Cacia		10 000 000	42 000 000							
Expanding Tissue Capacity - V.V. de Rodão			36 000 000							
Mozambique project		25 000 000	18 000 000	18 000 000		10 000 000	10 000 000	10 000 000	10 000 000	10 000 000
Pellets mill - USA			32 000 000	81 600 000						
New Tissue mill - Cacia					30 000 000	90 000 000				
Optimization of Pulp production - Fig. da Foz mil					40 000 000	45 000 000				

9.9. Appendix 9 – Long-Term Assets Forecast

Long-Term Assets (€)	2018 F	2019 F	2020 F	2021 F	2022 F
Long-Term Assets Initial Value	**4 746 769 091**	**4 930 811 662**	**5 031 152 893**	**5 081 596 812**	**5 132 183 294**
Investment	184 042 571	100 341 231	50 443 919	50 586 482	50 731 183
Long-Term Assets Final Value	**4 930 811 662**	**5 031 152 893**	**5 081 596 812**	**5 132 183 294**	**5 182 914 477**
Accumulated Depreciation/Amortiz.	3 221 535 097	3 381 323 553	3 542 721 100	3 705 720 744	3 870 327 098
Long-Term Assets Book Value	**1 709 276 565**	**1 649 829 340**	**1 538 875 712**	**1 426 462 549**	**1 312 587 378**

9.10. Appendix 10 – Net Working Capital

Net Working Capital	2013	2013	2013	2013	2013	2018 F	2019 F	2020 F	2021 F	2022 F
Inventories	202,93	188,86	212,55	208,89	187,80	190,61	193,58	197,45	198,15	198,86
Receivables and other current assets	200,81	188,81	215,37	215,88	237,70	241,27	245,02	249,93	250,81	251,70
State and other public entities	53,05	62,93	57,64	69,62	75,08	76,20	77,39	78,94	79,22	79,50
(-) Payables and other current liabilities	201,05	211,92	225,08	255,83	259,51	263,40	267,50	272,86	273,82	274,79
(-) State and other public entities	112,60	93,92	77,35	81,10	43,57	44,23	44,91	45,81	45,97	46,14
Net Working Capital	**143,14**	**134,76**	**183,14**	**157,46**	**197,49**	**200,46**	**203,57**	**207,65**	**208,38**	**209,13**
Change in Net Working Capital		**-8,38**	**48,38**	**-25,68**	**40,04**	**2,96**	**3,12**	**4,08**	**0,73**	**0,74**

9.11. Appendix 11 – Equity Risk Premium

		Equity Risk Premium for Countries		**Equity Risk Premium for Regions**		
	% of Total Revenues	ERP (Rating)	ERP (CDS)	ERP (Simple Average)	ERP (Weighted Average)	**Average**
Portugal	5%	7,96%	6,53%			7,25%
US	9%	5,08%	5,08%			5,08%
Rest of Europe	59%				6,25%	6,25%
Africa	12%			10,79%	10,63%	10,71%
Middle East	10%			7,78%	6,69%	7,24%
Rest of the World	5%				6,55%	6,55%
	100%				**Average ERP**	**6,84%**

9.12. Appendix 12 – Competitors of The Navigator Company

*** Values in thousands**		**COMPETITORS of THE NAVIGATOR COMPANY, S.A.**				
Company	**Country**	**Sales**	**Net Income**	**Total Assets**	**Market Capitalization**	**EBITDA**
THE NAVIGATOR COMPANY, S.A.	**Portugal**	**1 695 946**	**207 769**	**2 439 135**	**2 880 000**	**409 300**
Mondi Plc	Austria	7 106 696	715 401	7 213 725	8 612 000	1 760 000
STORA ENSO OYJ	Finland	10 220 000	614 000	11 770 000	12 253 000	1 880 000
INTERNATIONAL PAPER	USA	21 743 000	2 144 000	33 903 000	18 338 000	6 460 000
ARCTIC PAPER S.A.	Poland	2 952 806	36 720	1 900 325	512 195	79 600
EXACOMPTA CLAIREFONTAINE	France	610 420	12 866	689 833	114 279	47 800
IBERPAPEL GESTION, S.A.	Spain	220 749	22 906	353 302	349 196	37 460
SAPPI	South Africa	5 296 000	338 000	5 247 000	3 114 000	741 000
ENCE ENERGIA Y CELULOSA SA.	Spain	747 645	93 665	1 303 096	1 807 000	250 650
METSÄ BOARD OYJ	Finland	1 874 400	150 500	2 226 100	2 626 000	237 300
UPM-Kymmene OYJ	Finland	10 093 000	974 000	13 067 000	14 853 000	1 710 000
Smurfit Kappa Group plc	Ireland	8 562 000	423 000	9 005 000	5 432 000	1 350 000
Neenah, Inc. (NP)	USA	979 900	80 300	904 400	859 711	128 000

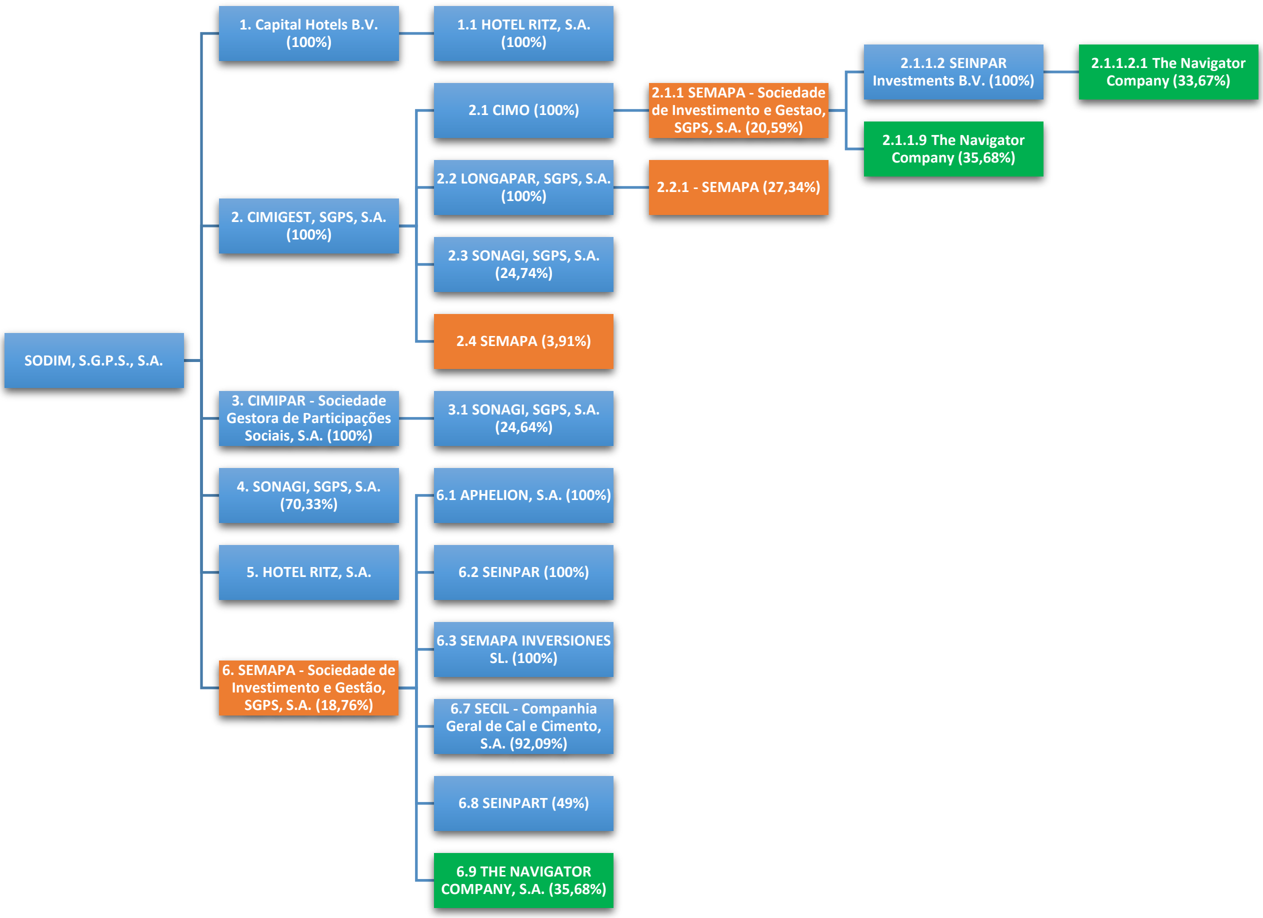
P. H. Glatfelter Company (GLN.F)	USA	1 596 423	7 914	1 730 795	386 467	135 080

9.13. Appendix 13 – The Choice of Peer Companies and Multiples

Company	Sales	Net Income	Total Assets	Market Capitalization	EBITDA	Nº of Matches	PEER
Mondi Plc	×	×	×	×	×	0	
STORA ENSO OYJ	×	×	×	×	×	0	
INTERNATIONAL PAPER	×	×	×	×	×	0	
ARCTIC PAPER S.A.	✓	×	✓	×	✓	3	
EXACOMPTA CLAIREFONTAINE	✓	×	✓	×	✓	3	
IBERPAPEL GESTION, S.A.	✓	×	×	×	✓	2	
SAPPI	✓	✓	×	✓	✓	4	YES
ENCE ENERGIA Y CELULOSA SA.	✓	✓	✓	✓	✓	5	YES
METSÄ BOARD OYJ	✓	✓	✓	✓	✓	5	YES
UPM-Kymmene OYJ	×	×	×	×	×	0	
Smurfit Kappa Group plc	×	×	×	×	×	0	
Neenah, Inc. (NP)	✓	✓	✓	×	✓	4	YES
P. H. Glatfelter Company (GLN.F)	✓	×	✓	×	✓	3	

					Multiples					
Company	Enterprise Value	EBITDA	Sales	EBITDA Margin	PER ratio	P/BV Ratio	P/Sales	EV/Sales	EV/EBITDA	EBITDA/ Sales
SAPPI	4 120 000 000	741 000 000	5 296 000 000	14,0%	8,49	1,39	0,47	0,71	5,57	0,14
ENCE ENERGIA Y CELULOSA SA.	1 440 000 000	250 650 000	747 645 000	33,5%	10,83	1,93	1,62	1,73	5,22	0,34
METSÄ BOARD OYJ	2 150 000 000	237 300 000	1 874 400 000	12,7%	9,29	1,44	0,97	1,11	9,60	0,13
Neenah, Inc. (NP)	1 230 000 000	128 000 000	979 900 000	13,1%	24,14	2,52	0,97	1,18	9,59	0,13
			Arithmetic mean		**13,19**	**1,82**	**1,01**	**1,18**	**7,50**	**0,18**
			Harmonic mean		**11,14**	**1,72**	**0,83**	**1,07**	**6,90**	**0,16**
The Navigator Company	3 050 810 000	403 838 090	1 636 834 437	24,7%	14,68	2,57	1,86	1,86	7,55	0,25

9.14. Appendix 14 – Ownership by level



Source: Amadeus

9.15. Appendix 15 – Main Shareholders of The Navigator Company, SA.

Shareholder name	Country	Ownership (%)
SEMAPA – Sociedade de Investimento e Gestão, SGPS, S.A.	PT	35,68%
SEINPAR Investments B.V.	NL	33,67%
其他社会公众股	-	23,00%
NORGES BANK	NO	2,16%
ZOOM LUX SARL	LU	2,13%
BANCO BPI SA.	PT	1,98%
法人股	-	0,09%

Source: Amadeus

9.16. Appendix 16 – Distribution of The Navigator Company in Portugal and throughout the World

Outside Portugal the Company has also 2 Offices in USA, and a nurserie in Mozambique.

And then there are the subsidiaries, in the places listed below.

Subsidiaries

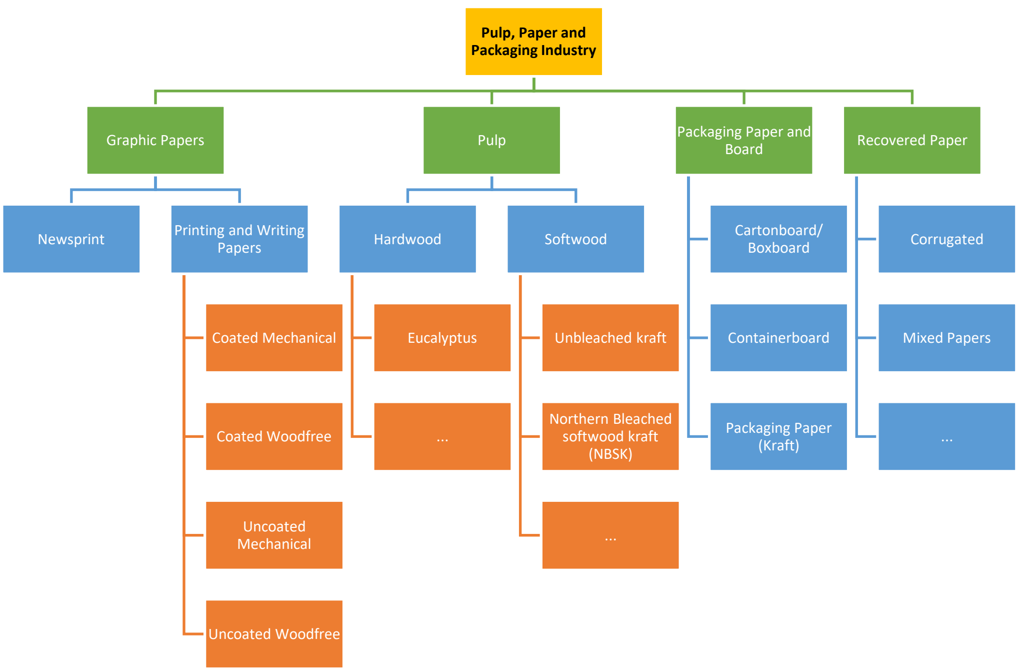
Europe
Amsterdam
Cacia
Cologne
Figueira da Foz
Geneva
Lisbon
London
Madrid
Moscow
Paris
Setúbal
Verona
Vila Velha de Ródão
Vienna
Warsaw
Wavre

USA & South America
Capitola
Dallas
Mexico City
Norwalk

Asia
Dubai
Istanbul

Africa
Casablanca
Maputo

9.17. Appendix 17 – Pulp, Paper and Packaging Industry



References

Books, Articles and Reports

Berk, J., & DeMarzo, P. (2014). *Corporate Finance - Third Edition.* USA: Pearson.

Damodaran, A. (1996). *Investment Valuation:Tools and techniques for determining the value of any asset.* United States of America: John Wiley & Sons, Inc.

Fujerik, M. (2018). The Navigator Company . *The Navigator´s exit from the pellets business is credit positive*. Moody´s Investor Service.

International Monetary Fund (2018). World Economic Outlook - October 2018. *Challenges to Steady Growth*.

International Monetary Fund (2018). IMF Country Report No. 18/273.

Luehrman, T. A. (1997). What´s It Worth? A General Manager´s Guide to Valuation. *Harvard Business Review*.

Research, G. V. (s.d.). *Biomass Power Market Analysis, Market Size, Application Analysis, Regional Outlook, Competitive Strategies and Forecasts, 2016 To 2024.*

Ved, D., & Menjivar, D. I. (2018). S&P Global - Ratings. *RatingsDirect - The Navigator Company S.A.* London.

Websites and Databases

Cody, H. M. (2016). *market grade – pulp:* Capacity Growth Could Undermine Recent Gains in Market Pulp Grades. Available from: http://www.paperage.com/issues/nov_dec2016/11_2016marketgrade.pdf

EURO-GRAPH. (2018). *EURO GRAPH - European Association of Graphic Producers*. Available from Paper Products: http://www.euro-graph.org/paper-products

Fisher, R. (2018). *China's Long-Term Impact on the Global Pulp and Paper Industry.* Available from: https://www.fisheri.com/images/features/insights/Fisher_Analysis_China_Long-Term_Impact_on_Global_PPI.pdf

Group, A. D. (2018). *Mozambique Economic Outlook*. Available from African Development Bank Group: https://www.afdb.org/en/countries/southern-africa/mozambique/mozambique-economic-outlook/

GROUP, O. (2018). *The market for Graphical Paper*. Available from OPTI GROUP: https://www.optigroup.com/en/market-graphical-paper

IMF. (s.d.). *Real GDP Growth*. Available from IMF DATAMAPPER: https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/OEMDC/ADVEC/WEOWORLD/PRT

Magazine, T. W. (2018). *The Navigator Company announces price hike*. Available from Tissue World Magazine: the independent news providerfor the global tissue business: http://www.tissueworldmagazine.com/latest-headlines/the-navigator-company-announces-price-hike/

Miller, J. (2012). *Coated Paper: Simple as one, two, three...Available from* PrintingImpressions: https://www.piworld.com/post/coated-printing-paper-differences-simple-one-two-three-jack-miller/all/

RISI. (2018). *Pulp, Paper and Packaging*. Obtido de RISI - Fastmarkets: https://www.risiinfo.com/industries/pulp-paper-packaging/

sappi - Group profile. (s.d.). Obtido de sappi: https://www.sappi.com/group-profile

Yahoo Finance: https://finance.yahoo.com

Aswath Damodaran Site: http://pages.stern.nyu.edu/~adamodar/New_

Home_Page/datafile/ctryprem.html

Amadeus Database

Investor Relations - Financial Information

The Navigator Company (2016a). *Annual Report 2015.*

The Navigator Company (2016b). Divulgação de Resultados do ano 2015.

The Navigator Company (2017a). *Annual Report 2016.*

The Navigator Company (2017b). Consolidated Annual Results for 2016.

The Navigator Company (2017c). *First 9 months Report 2017.*

The Navigator Company (2018a). Annual Report 2017.

The Navigator Company (2018b). *Consolidated Annual Results 2017.*

Portucel. (2015). Divulgação de Resultados 2014.

Portucel, S. (2016). Divulgação de Resultados do ano 2015.