Lisbon School of Economics & Management
Universidade de Lisboa

MASTER
IN FINANCE

MASTER'S FINAL WORK
INTERNSHIP REPORT

APPLYING FINANCIAL TOOLS AND INSIGHTS: INTERNSHIP EXPERIENCE IN THE TREASURY AND MARKETS DEPARTMENT AT BANCO ATLANTICO EUROPA

ANA BEATRIZ FARIA FREITAS

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JUNE - 2025

To a life filled with

passion. ✍

RESUMO

O presente relatório apresenta uma descrição do estágio curricular realizado no Departamento de Mercados Financeiros do Banco ATLANTICO Europa. O objetivo primordial do estágio foi fazer a ponte entre os conhecimentos académicos e as operações financeiras práticas, nomeadamente na área de gestão de carteiras de investimento.

Para tal, acompanhei indicadores macroeconómicos, analisei emitentes de obrigações e elaborei relatórios semanais de mercado que serviram de suporte às decisões de investimento. O presente relatório de estágio destaca a aplicação de conceitos teóricos como a gestão de riscos e a análise de investimentos num ambiente de atividades de investimento no Banco.

Esta experiência contribuiu significativamente para o desenvolvimento de competências técnicas e analíticas essenciais para uma carreira no setor financeiro.

Palavras-Chave: Mercados Financeiros, Renda Fixa, Gestão de Liquidez, Operações de Tesouraria, Risco de Crédito, Análise Macroeconómica, Mercado de Taxas de Juros, Estágio Curricular

Códigos JEL: G11, E44

ABSTRACT

This report presents a comprehensive overview of the curricular internship undertaken in the Treasury and Markets Department of Banco ATLANTICO Europa. The primary objective of the internship was to bridge academic knowledge with practical financial operations, particularly in the area of investment portfolio management.

To achieve this, I engaged in monitoring macroeconomic indicators, analysing bond issuers, and preparing weekly market reports that supported investment decisions. The present internship report highlights the application of theoretical concepts such as risk management, and investment analysis in a professional environment of investment management in the Bank.

This experience significantly contributed to the development of both technical and analytical competencies essential for a career in the financial sector.

KEYWORDS: Financial Markets, Fixed Income, Liquidity Management, Treasury Operations, Credit Risk, Macroeconomic Analysis, Interest Rate Markets, Curricular Internship

JEL CODES: G11, E44

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GLOSSARY

BAE – Banco Atlântico Europa

BCBS – Basel Committee on Banking Supervision

CDX – Credit Default Swap Index

CSC – Commercial Societies Code

DV01 – Dollar Value of a Basis Point

EBITDA – Earnings Before Interest, Taxes, Depreciation, and Amortization

ECB – European Central Bank

FX – Foreign Exchange

GDP – Gross Domestic Product

HQLA – High-Quality Liquid Assets

IMF – International Monetary Fund

LCR – Loan Coverage Ratio

MTD – Month-to-Date

NSFR – Net Stable Funding Ratio

PALOPs (Países Africanos de Língua Oficial Portuguesa) – Portuguese-Speaking African Countries

PD – Probability of Default

P&L – Profit and Loss

ROA – Return on Assets

ROE – Return on Equity

TMD – Treasury and Markets Department

US – United States

USD – United States Dollar

YTD – Year-to-Date

ACKNOWLEDGMENTS

Above all, I would like to express my deepest gratitude to my parents, without whom this journey would not have been possible. Thank you for always listening, for sharing in both my joys and struggles, and for doing everything in your power to provide me with the best possible life. Most of all, thank you for giving me the greatest gift of all: a quality education. I'm sorry for the moments of bad humour along the way. I hope I've been a good daughter – not necessarily the one you always dreamed of, but one who makes you proud.

To my dear Ecaterina – thank you for sweetening this journey. Thank for always believing in me and pushing me upwards and onwards. Your arms have been a lighthouse in the midst of the worst storms.

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AI DISCLAIMER

This internship report was developed with strict adherence to the academic integrity policies and guidelines set forth by ISEG, Universidade de Lisboa. The work presented herein is the result of my own research, analysis, and writing, unless otherwise cited. In the interest of transparency, I provide the following disclosure regarding the use of Artificial Intelligence (AI) tools in the creation of this internship report:

I disclose that AI tools were employed during the development of this thesis as follows:

- AI-based research tools were used to assist in the literature review and data collection.
- AI-powered software was utilized for data analysis and visualization.
- Generative AI tools were consulted for brainstorming and outlining purposes. However, all final writing, synthesis, and critical analysis are my own work. Instances where AI contributions were significant are clearly cited and acknowledged.

Nonetheless, I have ensured that the use of AI tools did not compromise the originality and integrity of my work. All sources of information, whether traditional or AI-assisted, have been appropriately cited in accordance with academic standards. The ethical use of AI in research and writing has been a guiding principle throughout the preparation of this thesis.

I understand the importance of maintaining academic integrity and take full responsibility for the content and originality of this work.

Ana Beatriz Faria Freitas, 30th June 2025

1. INTRODUCTION

Financial markets have a crucial significance in the global economy, serving as a venue for efficient capital allocation, risk management, and economic growth (Mishkin, 2019; Fabozzi et al., 2019). However, the complexity and interconnected nature of these markets have also turned them vulnerable to various risks, that range from interest rate fluctuations, credit risks, market volatility to liquidity constraints (Hull, 2023; Saunders & Cornett, 2020).

During my academic journey (Bachelors in Management and Masters in Finance), I often questioned the practical applicability of the theoretical knowledge acquired throughout my studies. To finally close this gap, I decided to enrol in an internship. More specifically, at the Treasury and Markets Department (TMD) of Banco ATLANTICO Europa (BAE).

Securing a curricular internship in Portugal, particularly in the field of Finance, is somewhat difficult, making this opportunity extremely valuable. It allows for exposure to financial concepts and principles in a professional context and provides an opportunity to expand my expertise beyond the scope of the Industry Elective (Financial Engineering) I took.

The bank's TMD ensures effective liquidity management by optimizing portfolio performance, and navigating market fluctuations. In turn, the internship involved exploring and applying automated tools designed for portfolio management and credit risk monitoring. This internship represented an essential step in my academic and professional journey as it allowed me to step beyond the theoretical confines of the classroom. I experienced firsthand how financial principles operate in the dynamics and unpredictability of the real world.

The primary objective of this report is to provide a comprehensive understanding of how the knowledge acquired during the curricular part of the Masters in Finance is applied in practice – specifically, within BAE. By describing the day to day at a desk that directly interacts with financial markets, the report contributes to the ongoing dialogue between academia and industry, highlighting the relevance of financial academic principles in a professional context.

This report is organised as follows. Chapter 2 provides a literature review focused on financial markets, their main types, and associated risks. Chapter 3 describes BAE, its clients, services and governance model. Chapter 4 presents the TMD, detailing its functions as well as its role and collaboration with other departments. Chapter 5 outlines the activities undertaken on each phase of the internship. Chapter 6 articulates the curricular plan of the Masters in Finance and the internship. Chapter 7 concludes by reflecting on the internship as a key step in applying academic knowledge to a real-world environment, emphasizing the growth of technical expertise, market insight, and professional skills.

2. Literature Review

This chapter introduces the concept of financial markets to provide a foundation for understanding the operating context of the TMD. This literature review covers the definition of financial markets, their characteristics, types, and risks.

2.1 Financial Markets: Overview and Characteristics

Financial markets serve as venues for individuals, institutions, and governments to exchange capital and financial instruments in a facilitated way. These markets are essential to economic growth, risk management, and creation of wealth because they allow efficient allocation of resources (Mishkin & Eakins, 2018).

One of their most essential characteristics is liquidity. This feature allows assets to be converted quickly into cash and at a fair value (Fabozzi et al., 2019). Liquidity is critical to promote investor confidence, as it ensures that market participants can transact efficiently without causing major price disruptions (Tripathi et al., 2019). This characteristic supports market stability, and makes financial markets more appealing to both individual and institutional investors (Tripathi et al., 2019).

Another decisive feature of financial markets is price discovery. Through the interaction between buyers and sellers, markets establish fair prices for securities (Kuck & Schweikert, 2023). This process is important for the efficiency of financial markets, as it reflects all available information. Theories, specifically, Efficient Market Hypothesis emphasizes that well-functioning markets incorporate new information quickly, ensuring rational price formation (Fama, 1970; Sharpe, 1964). However, some studies show that

prices do not immediately reflect new information, but rather adjust gradually over time (Chen & Lu, 2017).

Financial markets also play a fundamental part in risk transfer. Derivatives such as options, futures, and swaps provide market participants with tools to manage various risks, including those related to interest rates, foreign exchange fluctuations, and commodity prices (Hull, 2021). By enabling the transfer of risks from those unwilling or unable to bear them to those better equipped to manage them (Wang & Chang, 2024), financial markets contribute to greater stability and predictability in economic activity.

The importance of transparency and regulation cannot be overstated in the context of financial markets. Regulatory frameworks ensure fair trading practices, and reduce systemic risks (Moshirian, 2011). For instance, the Basel Framework provides guidelines designed to promote market transparency and support financial stability. Regulations build trust and confidence among market participants, which is essential for the long-term health of financial markets (BCBS, 2017a).

Finally, market intermediation is a fundament of efficiency in financial markets. Financial intermediaries match borrowers with lenders, facilitating the flow of capital, and ensuring the smooth functioning of the market (Huh & Infante, 2021). These entities bridge the gap between surplus and deficit units in the economy, enabling businesses and individuals to access needed funds while providing investment opportunities for savers (Shapiro et al., 2024).

The next subsection delves into the types of Financial Markets.

2.2 Types of Financial Markets

Financial markets can be broadly categorized into several types, each serving specific functions and catering to distinct participant needs.

One prominent category is the money markets, which specializes in trading short-term debt instruments with maturities of less than one year. These markets enable the management short-term funding requirements as they are a source of liquidity (Mishkin & Eakins, 2018). High liquidity and low risk are inherently associated with these instruments which makes them a vital component of the financial environment (Fabozzi & Modigliani, 2009).

In contrast, capital markets focus on the issuance and trading of long-term securities such as stocks and bonds. The purpose served by these markets is of supporting corporate growth and infrastructure development by facilitating the raising of long-term capital in large scale (Regan, 2017). For example, equity markets allow companies to issue shares to raise funds for expansion, and bond markets enable governments and corporations to borrow money (issue debt) for projects with longer time horizons (Fabozzi, 2019).

Another category is FX markets. These markets are key for global economic integration as they support cross-border transactions by allowing businesses and individuals to exchange one currency for another (Shapiro et al., 2024). They are also the largest and most liquid markets in the world, operating 24 hours, and they accommodate diverse participants, including governments, corporations, and speculators (Shapiro et al., 2024).

Derivative markets are specialized markets that allow trading of contracts whose value derives from underlying assets (Hull, 2021). Examples of underlying assets are stocks, commodities, currencies, or interest rates. Derivatives contracts (options, futures, and swaps) are most commonly used for the purposes of speculation or hedging (Hull, 2021).

The next subsection will explore the main risks in Financial Markets.

2.3 Risks in Financial Markets

Financial markets inherently involve risks that participants must manage. The primary risks include credit risk, interest rate risk, and liquidity risk (Hull, 2023).

Credit risk refers to the potential loss incurred by an entity when a counterparty fails to meet its financial obligations as agreed (Hull, 2023). This risk is particularly significant for financial institutions given that their portfolios have significant weights placed on loans, and bonds. For example, when the party that borrows money fails to make timely payments, the party that lends the money faces credit losses.

The measurement of credit risk involves a wide range of tools designed to assess the likelihood of default and the potential severity of a loss. Credit ratings, provided by agencies like Moody's, Standard & Poor's, and Fitch, offer standardized assessments of an entity's creditworthiness (Hull, 2023). These ratings reflect the Probability of Default

(PD) and help investors evaluate the relative risk of different issuers. In addition, Credit Default Swaps are financial derivatives that allow market participants to hedge or speculate on the credit risk of a particular entity (Hull, 2023). Credit Default Swaps spreads represent the cost of protection against default, and are used as market-implied indicators of credit risk (Haddou, 2024). PD models are based on historical data and statistics to estimate the likelihood of default of a borrower or counterparty over a specified time horizon. These models are employed in credit portfolio management and regulatory frameworks such as Basel III (BCBS, 2017a).

To mitigate credit risk, institutions adopt a variety of strategies aimed at minimizing potential losses. Diversification is an approach with the intent of spreading risk exposures across multiple counterparties, industries, and geographic regions, thereby reducing the impact of any single default (Hull, 2023). Collateral requirements provide an extra layer of protection by backing loans or derivatives with assets that can be seized and liquidated in the event of default. Furthermore, credit assessments and due diligence processes ensure that borrowers and counterparties are adequately evaluated before transactions approval (BCBS, 2025). These assessments involve analysing financial statements, cash flow projections, and industry conditions to determine the financial soundness of the entities under analysis.

By employing adequate measurement tools and mitigation strategies, financial institutions can manage credit risk, safeguard their operations and maintain the trust of their stakeholders. It is essential that individual institutions adopt a proactive approach to promote the broader stability of financial markets (BCBS, 2017b).

Interest rate risk arises from changes in interest rates that affect the market value of fixed-income securities and cash flow positions of institutions and investors (Hull, 2023). This type of risk is particularly relevant for entities holding large portfolios of bonds or loans, as well as for businesses with substantial floating-rate liabilities. When interest rates rise, the market value of existing bonds decreases because their fixed coupon payments become less attractive (i.e., lower) than those of newly issued bonds that offer higher yields (Hull, 2023). Similarly, for floating-rate liabilities, an increase in interest rates leads to higher borrowing costs, creates cash flow mismatches and impacts the organization's financial stability (Hull, 2023).

The management of interest rate risk involves several analytical tools and financial instruments structured to mitigate potential losses. Duration analysis is a technique used to measure the sensitivity of a bond or portfolio to changes in interest rates. For a given shift in interest rates, it gives an estimate of how much the price of a bond/portfolio will change (Fabozzi et al., 2019). Convexity, which measures how much duration will change in relation to interest rates, further refines these estimates by accounting for the curvature (second derivative) in the price-yield relationship (Hull, 2023).

Institutions frequently use financial derivatives to control interest rate risk. Interest rate swaps, for example, allow counterparties to exchange fixed-rate for floating-rate cash flows, providing flexibility in aligning cash flows with changing market conditions (Hull, 2023). Another product that allows players to hedge against anticipated rate fluctuations is interest rate futures contracts. These strategies can mitigate the impact of interest rate fluctuations and stabilize financial outcomes (Fabozzi et al., 2019).

Liquidity risk arises when entities are unable to meet short-term obligations due to a lack of cash or easily marketable assets (Hull, 2023). This risk affects especially financial institutions, as failing to meet obligations can result in operational disruptions, insolvency, loss of market confidence (Hull, 2023). It becomes particularly problematic when markets are illiquid, or when institutions struggle to get funding, potentially forcing them to sell assets at lower prices, exacerbating financial stress (Hull, 2023).

Market liquidity risk occurs when assets cannot be sold without incurring significant losses, often during periods of financial distress or volatility (Hull, 2023). Assets like corporate bonds or real estate are particularly vulnerable, as they tend to be less liquid than government securities (IMF, 2024).

Funding liquidity risk refers to the inability of an institution to secure financing at a reasonable cost to meet obligations, often occurring when financial health deteriorates or it is perceived as a high-risk borrower (Hull, 2023). During economic uncertainty or market downturns, institutions may be forced to sell assets at lower prices or delay payments, damaging their reputation. Banks may face funding difficulties when short-term interbank loans are unavailable, leading to a liquidity squeeze (Hull, 2023).

To mitigate liquidity risk, institutions employ strategies like stress-testing. Stress-testing involves the simulation of extreme scenarios to assess liquidity under adverse

conditions. This helps identify vulnerabilities and prepare for liquidity shocks (BCBS, 2017a). Another strategy is maintaining High Quality Liquid Assets (HQLA) which can be easily converted into cash during stress periods. Basel III emphasizes the importance of holding sufficient HQLA to cover short-term liquidity needs via the Loan Coverage Ratio (LCR) (BCBS, 2017a).

Additionally, adhering to Basel III liquidity ratios helps make sure that institutions maintain adequate liquidity. The LCR requires institutions to hold enough HQLA to cover 30-day stress period outflows, and the NSFR ensures a stable long-term funding profile. These ratios are designed to enhance liquidity stability and resilience during economic uncertainty (BCBS, 2017a).

After the theoretical background on Financial Markets, the next chapter will describe the institution where the curricular internship took place, its history, clients and services, and governance model.

3. Description of The Bank

Chapter 3 provides an in-depth look at BAE, starting with an overview of its history, organizational structure, and international presence. The chapter then explores the bank's client services, highlighting its different client segments. Finally, it examines the governance model of BAE, outlining its decision-making framework and committees.

Banco ATLANTICO Europa was founded in 2009. The bank is headquartered in Lisbon, Portugal, and operates under the regulation and supervision of the Bank of Portugal (no. 189) and the Portuguese Securities and Exchange Commission (no. 343), ensuring compliance with both national and European financial regulations.

At the end of 2024, the bank's share capital amounted to €50,000,000, fully paid up and represented by 50,000,000 common, registered shares, each with a nominal value of €1. The bank's balance sheet totalled €665,773,713, consisting of liabilities amounting to €588,144,791 and equity of €77,628,922. Within the liabilities, €162,127,500 corresponded to deposits from credit institutions, while €407,347,192 were client deposits.

The bank is fully owned by ATLANTICO Europa SGPS, S.A. The latter's shareholding structure is mainly composed of Atlântico Financial Group, SARL, which

holds 96.5% of the capital. Nasoluma, S.A. holds 3.498%, and the remaining 0.002% is held by other shareholders.

BAE aspires to establish itself as a benchmark institution in fostering financial and economic relations between Africa, particularly Portuguese-Speaking African Countries (PALOPs), and Europe.

BAE expanded its footprint outside Portugal in 2015 by opening its first international branch in Windhoek, Namibia, as part of its strategy to establish an international presence. Its expansion into this market is part of its broader strategy to offer financial services to individuals and businesses with cross-border banking needs. The branch's growth remains minimal, with current focus on enhancing efficiency and optimizing costs. ATLANTICO Namibia is primarily dedicated to developing payment services and everyday financial solutions that create value and address the needs of the Namibian economy (BAE, 2025b). For that, the organisation counts with a team of total of 186 employees, distributed between Portugal (97 per cent) and Namibia (3 per cent).

Having established an understanding of BAEs history, and international presence, the report now turns to examine the bank’s clientele and services.

3.1 Clients and Services

BAE provides a comprehensive range of financial products and services, appealing to various client segments. The bank serves individual clients and families with diverse needs, expectations, and levels of autonomy. For these clients, the bank offers tailored solutions that address both everyday banking needs and more complex financial requirements. The bank's portfolio includes services such as current accounts, savings accounts, credit cards, personal loans, and mortgage solutions (BAE, 2025a).

BAE offers a segment known as Affluent Banking, designed to serve individual clients through an integrated multichannel relationship model. Although clients in this segment do not have an assigned manager, they receive personalized service via digital channels, complemented by a comprehensive Client Support service available in various formats. Additionally, clients have access to a physical agency located in Lisbon,.

For its high-net-worth clients, BAE offers a Premium Segment, where clients can subscribe to a Premium Service. This service promotes a close relationship between the

bank and its clients, with a dedicated manager assigned to each client. The Premium Service focuses on integral and personalized wealth management, attentive to the clients' needs and tailored to their financial goals. This hands-on approach ensures that clients receive expert guidance in managing and growing their wealth.

In addition, BAE has a Corporate & Institutional Banking segment, where it offers an integrated suite of products and services designed to meet the specific needs of businesses and institutional clients. The bank places a strong emphasis on a deep knowledge of the economic, financial, and social systems in which its corporate clients operate. This expertise enables the bank to effectively support international commerce through services like Correspondent Banking, International Trade, and Trade Finance, helping businesses navigate global markets and expand their operations.

The bank is also committed to digital transformation, becoming the first Portuguese financial institution to offer account openings via videoconference, enabling clients to open accounts remotely in both euros and U.S. dollars (Alves, 2017).

As of December 2024, the bank served around 33 856 clients (2720 Premium, 28700 Affluent, 528 Corporate) spread across 100 different countries (BAE, 2025b). As of the latest data, 100% of clients hold a demand deposit (current) account, while only 4% have savings accounts (time deposits). Investment products are held by 2% of the client base. Regarding payment instruments, 40% of clients possess a debit card, whereas credit card penetration remains low at just 1%. Access to digital channels is strong, with 80% of clients using mobile or internet banking. Loans are held by 2% of clients.

After reviewing the various client segments and services that BAE offers, it is essential to understand the governance framework that underpins these operations. The next section will delve into the bank’s governance model, explaining its organizational structure.

3.2 Governance Model

According to BAE (2025b), BAE has adopted a monistic corporate governance model in accordance with Article 278 of the Commercial Societies Code (CSC), which ensures a clear separation of powers between its various governing bodies. In a monistic governance model, there is only one board that consists of both the management and the supervisors. The supervisors are part of the board. Within the one-tier board a

distinction is made between executive directors and non-executive directors (Thys et al., 2023).

Figure 1 shows the governance structure of BAE. The governance structure includes the General Assembly, the Board of Directors, the Supervisory Board, and the Statutory Auditor. In this model, the Board of Directors holds responsibility for administration, while delegating daily management to the Executive Committee. The Supervisory Board and the Statutory Auditor handle oversight functions.

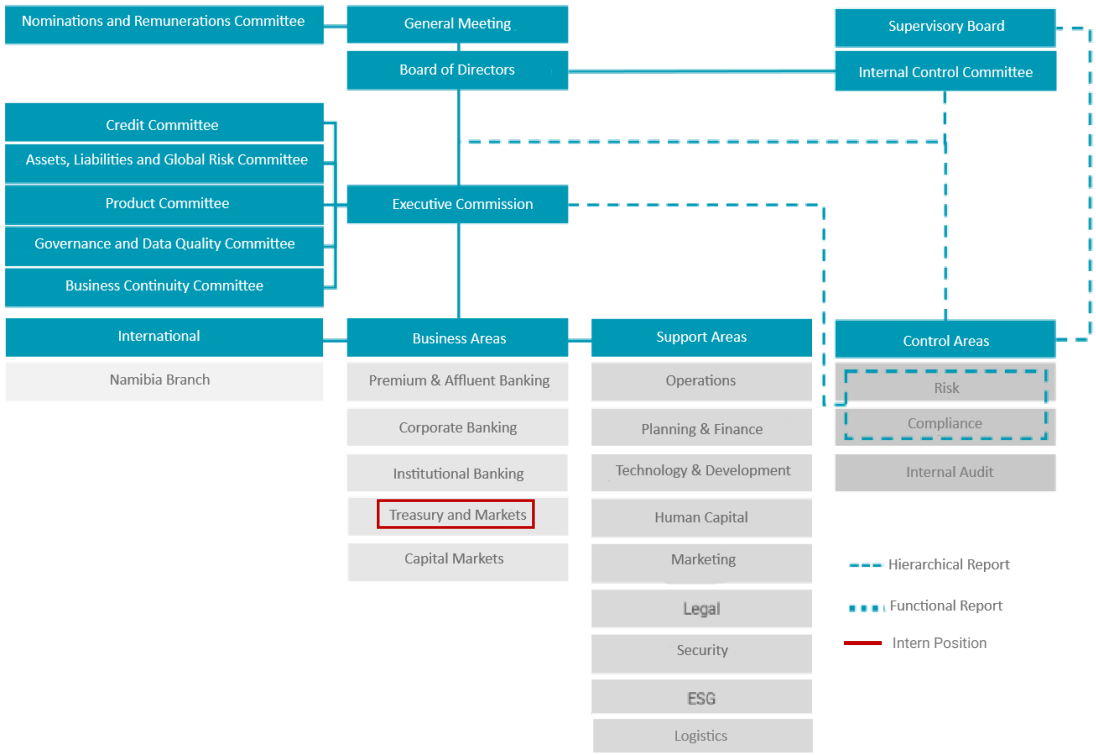

FIGURE 1 – Organisational chart of BAE

Source: BAE (2025b)

The governance framework is built on principles of transparency, efficiency, and ongoing monitoring of risks, aiming to balance management and potential conflicts of interest. Additionally, the Bank has five main committees:

- Internal Control Committee: Supports the Board of Directors in decision-making related to internal control, including anti-money laundering and combating terrorism financing, and monitors risk management and internal audit activities.

- Nominations and Remunerations Committee: Ensures that the Bank's remuneration model is aligned with its culture, long-term risk strategy, and legal requirements. It also assesses the suitability of the Board and essential functions.
- Credit Committee: Manages the credit portfolio, evaluating proposals for credit grants, renewals, and restructures, and monitors credit portfolio performance and risks.
- Products Committee: Ensures that new or modified products undergo a thorough risk assessment before launch.
- ALCO & Global Risk Committee: Oversees asset and liability management and global risk management, tracking balance sheet evolution, credit risk, interest rate risk, and operational risks.

These bodies ensure the Bank's compliance, strategic alignment, and effective risk management.

Note that Figure 1 has the TMD highlighted as this was the department where my internship took place. The following section provides a detailed overview of the TMD, including its structure, main responsibilities, and collaboration with other departments.

4. Description of The Treasury and Markets Department

The Treasury and Markets Department (TMD) was the department where I carried out my internship. It focuses its activity on managing the liquidity of the bank's balance sheet, controlling its investment portfolio and analysing and managing market risks. The department also contributes to the management of financial flows resulting from client products and provides the various internal teams with a range of analysis and information on the financial markets (BAE, 2025b).

This department is composed by 3 people and 3 units: Treasury Management, Investment Portfolio Management and Foreign Exchange and International Trade. The head of TMD is the portfolio manager and his right-hand person is the treasurer. Note that in Figure 4 in chapter 3 TMD directly reports to the Executive Commission.

The following sub-sections provide an overview of each of the TMD activities, including a detailed description of each sub-parts' main responsibilities, and practices and procedures.

4.1. Treasury Management

Central to the department's function is balance sheet liquidity management. This involves ensuring that the bank has enough liquid assets to cover its short-term liabilities, meet capital adequacy standards, and comply with regulatory requirements. The department ensures that there is always enough cash or easily convertible assets to meet the bank's immediate financial commitments.

The department strategically does excess liquidity optimization of any excess liquidity that bank holds. This involves deploying surplus funds in a way that maximizes returns, while ensuring that the risk exposure remains aligned with the bank's risk profile.

Treasury management also includes securing external funding when necessary to ensure the bank remains well-capitalized. The department is responsible for maintaining relationships with external funding sources and ensuring that the bank can access the required capital quickly and under favourable conditions.

The most valuable lesson I learned in Treasury Management is that each day is a day, because cash needs and ending balances are always different.

The job here is mainly done in Money Markets through borrowing and lending. TMD lends mostly to the European Central Bank (ECB) due to the conservative profile of BAE. Another aspect regards to regulation, as a coefficient of zero concerning the Risk Weighted Assets is attributed to deposits in the ECB as stated in the banking regulation:

> 20.10 Exposures to the Bank for International Settlements, the International Monetary Fund, the European Central Bank, the European Union, the European Stability Mechanism and the European Financial Stability Facility may receive a 0% risk weight.
>
> In: BCBS (2023), p.3.

As part of liquidity management, a key process is cash-flow mapping. According to what was observed, the treasurer only updates the map if the origin of the funds is external to the bank. The map's nature is merely factual as there are no expectations embedded in the numbers.

At TMD, mornings are busier as it is normal for a bank to have its liquidity position resolved in the morning. Especially to quote transactions and release client funds. Many of these operations are done in TARGET. The Eurosystem operates a range of services (TARGET Services) to facilitate the seamless flow of cash, securities, and collateral across Europe (ECB, 2005). As illustrated in figure 6, these services include T2 (for payment settlements), T2S (for securities settlements), TIPS (for instant payments), and ECMS (for collateral management). All these services are settled in central bank money (ECB, n.d.).

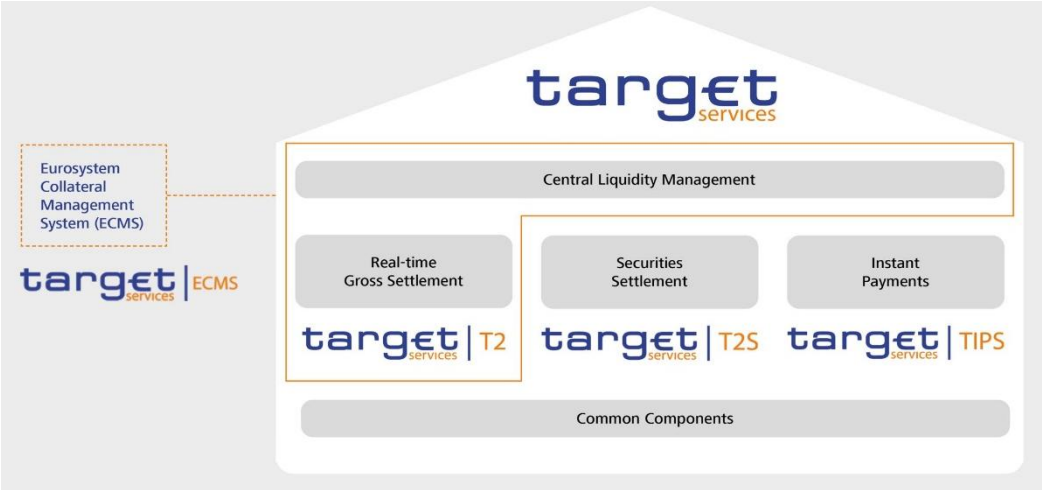

FIGURE 2 – Overview of TARGET System

Source: Deutsche Bundesbank

This system has a specific time schedule where 4 p.m. is the limit to liquidate client transactions; 4 to 5 p.m. is the time window to settle interbank transactions. In the afternoon, the treasurer closes accounts, checks the ending daily balances, and confirms what remains to do overnight lending (4 to 5 p.m.) but always leaving a security margin to face uncertainties that may appear.

The next subsection describes the Investment Portfolio Management sub-unit.

4.2. Investment Portfolio Management

In line with its treasury responsibilities, the department is also tasked with managing the bank's investment portfolio. This function is key to enhancing the bank's profitability and securing its long-term financial health. This includes actively defining the bank's investment policies and shaping strategies that balance the pursuit of returns with the

management of risk. The department operates in both national and international financial markets, mostly managing fixed-income instruments.

The department plays a significant part in defining and, especially, executing the bank's investment strategy. This includes determining the types of assets to invest in, the geographic areas to participate in, and the overall allocation of the portfolio. The strategy is structured to align with the bank's risk appetite and financial goals in order to balance opportunities for growth with the need for capital preservation.

Portfolio management involves continuous monitoring of the risk associated with the bank's investments. Risk management is carried out through the assessment and mitigation of portfolio risks, including market risk, credit risk, and liquidity risk. By proactively managing these risks, the department ensures that the bank's investments remain in line with its financial strategy.

The most valuable lesson I learned in Investment Portfolio Management is to keep up with the news and justify market movements given those events (news).

The portfolio manager focuses on daily market monitoring, portfolio management, risk management, and execution of trades. He reviews market news, economic data, and bond yields to assess any changes in the market. If needed, the necessary adjustments are made by transacting or holding securities to maintain the desired risk-return profile.

The role includes communication with senior management, providing updates on performance and strategy. Weekly and monthly reports are prepared to assess the department's performance, incorporating detailed information on the volume of transactions in FX and the corresponding Profit and Loss (P&L) figures shown in Table 1. These reports also track the outstanding amounts in swaps, along with their respective P&L.

TABLE 1 – Indicators of Department Performance

Month	Total MMI (EUR) 2025	Total Forex			Total FX SWAPS		
		Transactions (EUR)	P&L (EUR)	P&L (%)	Outstanding (EUR)	P&L (EUR)	P&L (%)
Average 2024	790 755.73	192 109 490.46	130 464.14	0.05%	109 003 026.38	119 376.21	0.12%
January	848 959.28	288 456 660.74	193 257.96	0.05%	122 587 180.57	140 524.33	0.11%
February	664 104.97	197 584 441.02	149 468.27	0.05%	121 722 171.52	119 373.95	0.12%
March	645 977.91	195 601 193.49	150 417.44	0.05%	113 875 174.23	166 522.83	0.14%
April	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-
November	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-
YTD	2 159 042.16	681 642 295.26	493 143.67	0.05%	358 184 526.31	426 421.11	0.12%

Source: Internal Document

Note: All values in this table have been anonymized and do not reflect actual performance figures.

Additionally, in Table 2, the reports include an analysis of the bank's portfolio performance, which covers key metrics such as Mark-to-Market (Pull to Par), changes in price for the month-to-date (MTD) and year-to-date (YTD), as well as Dollar Value of a Basis Point (DV01), categorized by asset class (government or corporate) and currency.

TABLE 2 – Indicators of Portfolio Performance

PORTFOLIO HTCS								
Asset	Currency	Amount (EUR)	Yield	MtM - Pull to Par	Chg Price MTD	Chg Price YTD	RISK	DV01
Government	EUR	684 048.28	2.38%	- 745.10	0.26%	0.03%	2.58	176.30
	USD	17 374 612.84	4.86%	- 47 097.78	0.00%	0.00%	2.01	3 069.63
Corporate	EUR	41 008 891.24	3.18%	- 20 709.80	-0.03%	0.00%	2.02	8 627.26
	USD	37 315 180.61	3.78%	- 326 612.26	-0.15%	0.54%	1.64	5 236.41
Portfolio HTCS		96 382 732.97	3.71%	- 395 164.93	-0.07%	0.57%	1.89	17 109.60

Source: Internal Document

Note: All values in this table have been anonymized and do not reflect actual performance figures.

A highlight section (shown in Table 3) is also included, listing the top 10 interest earners, with indicators such as net interest for 1 day, 30 days, and DV01.

TABLE 3 – Top 10 Interest Earners

Top 10 HTCS Interest Earners								
Pos.	Asset	Currency	Amount (EUR)	Yield	Maturity	1d Net Interest	30d Net Interest	DV01
1	Issuer A 3.25 06/30/27	USD	6 275 350.15	4.41%	30/04/2026	1 006.90	4 864.46	1 763.08
2	Issuer B 2.75 12/15/28	USD	7 759 082.47	2.76%	15/10/2027	1 100.71	4 222.87	620.48
3	Issuer C 1.90 02/20/28 REGS	USD	4 858 457.21	3.56%	24/01/2028	1 129.90	20 447.94	1 385.85
4	Issuer D V4.25 11/01/26 EMTN	EUR	6 328 962.12	5.01%	02/10/2026	847.41	25 942.96	1 285.33
5	Issuer E V3.00 07/01/26 EMTN	EUR	5 139 887.38	3.38%	15/06/2026	1 070.74	43 051.41	1 346.06
6	Issuer F 4.75 01/15/27 BKNT	USD	7 421 421.00	5.42%	04/12/2026	1 094.32	7 956.49	871.91
7	Issuer G 4.60 01/31/27	USD	6 136 633.26	2.58%	11/12/2026	504.12	39 328.67	1 873.53
8	Issuer H 4.30 01/15/27	USD	1 372 603.45	5.89%	08/12/2026	842.83	34 936.88	1 963.41
9	Issuer I F 06/30/25	EUR	3 867 195.97	3.35%	30/05/2025	722.13	38 111.16	842.45
10	Issuer J V4.85 11/30/28 EMTN	EUR	7 370 676.33	3.83%	31/10/2028	825.57	15 479.62	722.28
Total	Top 10 Interest Share	EUR	56 530 269.34	3.91%	-	9 144.63	234 342.46	12 674.38

Source: Internal Document

Note: All values in this table have been anonymized and do not reflect actual performance figures.

At the end of the day, the portfolio's progress is tracked and preparations for the next day's market activity are made.

The next subsection describes the Foreign Exchange and International Trade sub-unit.

4.3. Foreign Exchange and International Trade

Another function of the TMD is FX management. It involves monitoring the bank's foreign currency positions and ensuring effective management of the exposure to currency fluctuations.

The FX trading function is responsible for engaging with FX markets to meet the bank's own financial needs and those of its clients. The department trades in various currencies (USD, GBP, ZAR and JPY, mostly) to manage and attend bank's and clients' needs.

An important part of the FX Trading function is managing the risks that emerge from fluctuations in currency exchange rates. By maintaining limited (near to zero) currency positions, the bank can protect itself against potential losses due to volatility in the FX markets.

The most valuable lesson learned in FX is to have sharp focus under a volatile environment.

To exercise her function, the FX trader has at her disposal two types of platforms: single bank platforms and multibank platforms. A single bank platform is a trading platform provided by one financial institution, typically a large bank, where clients can access the bank's liquidity and execute trades. These platforms often serve as a direct link to the bank's proprietary pricing and liquidity sources. A multibank platform aggregates liquidity from multiple banks and financial institutions, allowing traders to access a broader range of pricing and liquidity options. This type of platform provides access to several liquidity providers, often through a centralized system.

FX margins are set when quoting FX trades and typically depend on the type of client, volume of transaction and liquidity in the market. Margins are normally higher in the case of lower volume and retail activity, and lower in the case of higher volume and professional activity.

Lower value transactions can be done automatically (no human interaction) whereas large values must be articulated with the account manager and negotiated with the TMD.

FX trading was the function that allowed closer contact to a volatile market. Quotes are live and the prices change very rapidly. In the blink of an eye, a huge gain or loss can be realized as it is time enough for the rates to move (favourably or not).

The next sub-section describes TMD's interactions with other departments.

4.4 Treasury and Markets Department and Interdepartmental Interactions

The TMD department collaborates closely with other internal teams to align its strategies with broader organizational goals. This interdepartmental coordination helps optimize cash flow, monitor market exposures, and ensure compliance with regulatory requirements, while facilitating the seamless execution of trades and funding operations.

Below the interactions are described:

- Commercial Area
    - Interaction: TMD may provide funding or liquidity solutions for smaller clients. The Commercial Area communicates client needs regarding financing, and deposits, which helps TMD in managing the bank's overall liquidity.
- Operations

- Interaction: Once TMD executes trades in the financial markets (e.g., FX), Operations ensures these transactions are settled, recorded, and reconciled.

- Finance (Accounting)
  - Interaction: TMD shares market data, cash flow forecasts, and funding requirements, while Finance tracks the impact of Treasury's actions on overall profitability

- Risk
  - Interaction: TMD and Risk teams collaborate to define and monitor risk limits, ensuring that Treasury's activities remain within acceptable risk thresholds. Risk provides guidance to Treasury on risk limits for trading positions, collateral requirements, and exposure to market fluctuations.

The next section describes the internship and its several phases.

5. Internship Description

This section outlines the various phases of the internship I completed at BAE, within the TMD. The internship commenced on 13th January 2025 and concluded on 29th April 2025, with a total duration of 400 hours.

The next sub-section describes the first phase of the internship.

5.1. 1st Phase – Immersion in Financial Markets and Reporting Activities

A crucial component of my internship was the opportunity to closely observe and participate in the routines of the TMD team. This hands-on approach allowed me to gain a 'real feeling' of what it means to be part of a financial markets division.

The internship programme provided an in-depth explanation of each sub-area's function, with on-the-job demonstrations of the responsibilities and tasks associated with each of the different functions inside the department. For instance, I learned how liquidity management ensures that the bank maintains sufficient reserves to meet obligations, while the trading desk focuses on executing trades efficiently to capitalise on market opportunities.

As part of the TMD's operations, reporting plays a vital role in maintaining transparency, ensuring regulatory compliance, and facilitating informed decision-

making. I was introduced to the various reports that the team prepares on a regular basis, including weekly and monthly reports, on portfolio and department's performance and market monitoring. This exposure to reporting activities enhanced my abilities in information selection. Initially, the volume of data and the challenge of selecting relevant information were overwhelming. However, after the first few weeks of reporting, I was able to refine my weekly news report, effectively filtering and summarising key financial developments.

One of the main difficulties I encountered was distinguishing between the political orientation of news authors and the factual content of their reports. In discussions with my BAE supervisor, we acknowledged that many financial news articles today are inherently biased by the political perspectives of their authors. Recognising and mitigating this bias became an essential skill in my analysis. By analysing the political and economic conditions of the economy underlying to the article, I was able to better assess the factual content of the text.

Another challenge was determining which information was relevant. As I gained a deeper understanding of the department's structure and the primary markets in which it operates, I became more capable of selecting pertinent financial news and data.

One of the most fascinating aspects of this reporting activity was observing real-time market reactions to global events. This phenomenon was particularly evident through FX trading platforms, where exchange rates fluctuated immensely. Additionally, the Bloomberg Terminal provided a comprehensive visual representation of market dynamics, with price movements materialising in oscillating green and red indicators, as well as in charts and quote tables.

Two particularly noteworthy events during my internship were the DeepSeek bubble and the downturn in technology stocks, as well as the German budget rejection by the Green Party. These episodes provided valuable insights into the interconnected nature of financial markets, demonstrating how political and economic developments can trigger immediate and significant fluctuations in asset prices.

The next sub-section describes the second phase of the internship.

5.2. 2nd Phase – Gaining Autonomy in Analysis and Reporting

As I entered the second phase of my internship, I was introduced to the main tools and systems used daily, such as Bloomberg, Excel, which are essential for market analysis, liquidity management, and risk assessment. This exposure helped me familiarise myself with the department's workflow, methodologies, and best practices, enabling me to integrate more effectively into the team.

This phase was also designed to provide a structured introduction and formal presentation to the activities and projects I would be involved in, ensuring that I fully understood their objectives, theoretical background, and practical implementation.

As part of my ongoing responsibilities, I was assigned the task of gathering information on market-moving events and presenting it to the team on a weekly basis. This task served as a support function, ensuring that the team remained well-informed about significant developments impacting financial markets. These reports were presented on a weekly basis, usually on Fridays. An example report can be found in Annex 1.

In addition to this, I was entrusted with conducting independent research and analysis on fixed-income instruments that I identified during my market monitoring. Unlike the weekly market updates, this activity was carried out at my own pace, with each analysis being presented once I had completed it.

Beyond the practical introduction to my responsibilities, this phase also emphasised the theoretical foundations of the projects I would be undertaking. Through in-depth discussions with my BAE supervisor, I explored financial concepts related to fixed-income investment analysis, including the primary indicators utilised in this process. A particular focus was placed on understanding the factors that influence the yield curve and the mechanisms through which these factors exert their impact. This theoretical foundation provided me with a more structured and analytical approach to my tasks, enhancing my ability to interpret financial data and apply relevant methodologies effectively.

The next sub-section describes the third phase of the internship.

5.3. 3rd Phase - Building Tools to Support Market Analysis

The third phase of my internship focused on the execution and application of tools integral to the projects and activities I was involved in. This phase was an essential part of my learning process, as it allowed me to apply the theoretical knowledge I had acquired in a practical setting.

A significant portion of this phase involved developing and automating Excel spreadsheets to integrate financial data and analysis tools. I used various Excel functions with a special focus on the Bloomberg Data Point and Bloomberg Data History functions, which allowed me to extract crucial financial and macroeconomic. Through this process, I gained the ability to generate dynamic, data-driven reports for further evaluation.

The next sub-section describes the tools used and developed for Macroeconomic Analysis.

5.3.1 Macroeconomic Analysis

Excel

The main excel (Annex 2) is structured into several components, the first of which is the Cover Page, which provides a comprehensive market overview. This page is formatted to highlight movements in financial indicators. Conditional formatting is applied so that price increases are displayed in green and declines in red, while for yields and spreads, the colour logic is reversed – red for increases and green for decreases. The cover page is structured into distinct sections, beginning with an equity market overview, which includes indices displayed alongside their latest price or spread, as well as their percentage variations on a week-to-date, MTD, and YTD basis. Following this, there is a section that regards FX and Commodities, and tracks the performance of EUR/USD, WTI crude oil, Brent crude oil, and gold. Key interest rates are also included to provide further insight into monetary conditions. Additionally, the cover page presents a credit market overview, and tracks the performance of investment-grade and high-yield bonds in both Europe and the US via the iTraxx Europe and CDX indices, respectively.

The tool also contains a dedicated Sovereign Bonds Analysis section. This part of the Cover Page sheet provides an in-depth assessment of the status of sovereign bonds, and exhibits metrics, namely, yield, swap spread, and yield variations over a weekly and

three-month period. The analysis is structured across four key maturities – 2, 5, 10, and 30 years.

Another component of the tool is the Portfolio Overview, which provides a summary of the bonds under analysis. This sheet includes a set of main characteristics for each bond, specifically, issuer name, sector, maturity date, currency, whether it is a green bond, and whether it is a callable security. Furthermore, it tracks issued amount, bid price, yield, and credit ratings. In addition to the basic details described before, the tool incorporates risk indicators, providing an assessment of credit, market and liquidity risks. The performance of each bond is tracked over different time-frames, with daily, monthly, and yearly price changes highlighted to monitor price trends. To support a thorough credit analysis, the sheet also features various credit spread indicators, namely, G-spread, Asset Swap spread, Z-spread, and Bloomberg's Liquidity Score, for insights into relative value and market liquidity. Please refer to the Excel file in Annex 2 (Sheet Data Fields) which defines and explains the metrics mentioned in this paragraph.

The file also includes a sheet named Investment Criteria to ensure that bond selection aligns with specific investment objectives.

Lastly, the tool incorporates a section named Bloomberg Data, where all relevant data is sourced from Bloomberg and stored in a raw format. The Cover Page and Portfolio Overview sheets are dynamically linked to this dataset, ensuring that all updates are reflected across the spreadsheet without the need for manual adjustments.

PowerPoint

As part of my intern responsibilities, I was tasked with preparing weekly reports (Annex 1) to be presented on Fridays inside the department. The report highlights significant trends and the events that impacted financial markets during the week.

The report begins with an overview of Global Fixed Income Trends, and summarizes the main tendencies across Emerging and Developed Markets. It also exhibits Geopolitical Influences and Divergent Trends across relevant global regions.

Following this, the report has a section for News Headlines, that highlights the most impactful events of the week for financial markets. Recent topics in this section have often revolved around policy developments from major central banks, and

geopolitical events such as the impact of tariff policies proposed by U.S. President Donald Trump.

The next section covers Economic Indicators for Fixed Income Investors within relevant markets. This analysis focuses on: Inflation trends, Gross Domestic Product (GDP) growth, and Unemployment rate.

The report then examines the Impact of Interest Rates on Bond Prices. This section includes: Key Policy Rates and Market Expectations.

The subsequent section, Weekly Interest Rate Overview, provides an analysis of sovereign bond yields and interest rate trends. The data for this section is sourced from the Excel file (Annex 2) used in market analysis.

Following this, the report assesses Credit Spreads, which measure the credit quality of fixed income investments and reflect changes in credit risk premiums. This section relies on data extracted from the Excel file (Annex 2).

Next, the FX and Commodities Indicators section summarises currency exchange rate movements and commodity price changes. The data for this section is supplemented by snapshots from *TradingEconomics.com*.

To conclude, the report also includes an Equity Markets section, to review the performance of major stock indices as recorded in the Excel file (Annex 2). This section is then supplemented with relevant news updates retrieved from *TradingEconomics.com* to provide context on the movements exhibited by the market.

This structured report consolidates market information into a concise and structured format, helping each of these professionals on their daily activities to make informed decisions.

The section on central bank policy rates and market expectations helps the treasurer anticipate potential shifts in the cost of borrowing and deposit rates. The sovereign yield analysis provides a view of the current environment of risk-free rates, which are used as benchmarks for corporate financing. The treasurer can also consult the section on credit spreads, and assess counterparty risk when dealing with money market instruments.

The interest rate outlook affects the valuation of bonds and, consequently, the decision to buy, hold, or sell securities within a portfolio. If expectations for central bank rate change, the portfolio manager may adjust the weights of the portfolio to mitigate undesired risk exposure. The credit spreads section helps to understand how changes in corporate bond risk are affecting the prices of corporate bonds, influencing whether to reallocate funds between investment-grade and high-yield bonds. The macroeconomic indicators, namely inflation and GDP growth, impact market sentiment and credit risk, and guide portfolio adjustments. The FX and commodities data is also valuable for understanding inflationary pressures. Lastly, Equity market movements provide risk sentiment indicators regarding corporate debt which includes many fixed-income securities.

For the FX trader, the report is relevant to comprehend macroeconomic trends, interest rate differentials, and geopolitical risks, which are important drivers that influence currency movements. Inflation data, GDP growth, and employment figures affect central bank decisions, affect rate differentials that drive currency valuations. Geopolitical risks and trade policies can create volatility, presenting trading opportunities or risks. The FX indicators in my report help the FX trader assess how major currency pairs are reacting to market-moving events. The commodity price movements, especially in assets like oil and gold, can also influence currency valuations, particularly for commodity-exporting countries.

The next sub-section describes the tools used and developed for Issuer Analysis.

5.3.2 Tools for Issuer Analysis

Excel

The debt issuer analysis tool provides a comprehensive overview of the issuer's financial position and performance, offering valuable insights for fixed-income investment decisions. The top section of the Equity Analysis sheet in the excel file of Annex 3 contains market data, including the issuer's mid-price, credit rating, market capitalisation, price-to-earnings ratio, MTD performance, and YTD performance.

The next section focuses on the issuer's financial performance over the past five years (2020 to 2024), and provides details on the following financial metrics: revenues, operating income, operating margin (as a percentage), net income, assets, and liabilities.

These figures are essential to understand the issuer's overall financial health, which impact the risk associated with investing in its debt.

Finally, the tool includes a comparative analysis against a relevant index that accurately represents the industry where the issuer operates. This section analyses financial ratios, namely Return on Equity after tax (ROE), Return on Assets after tax (ROA), Operating Margin, Leverage Ratio, and Dividend Yield. These metrics allow a comparison of the issuer's performance relative to its peers to assess its competitive robustness within the industry.

PowerPoint

In addition to the Excel tools, I also worked on a detailed PowerPoint presentation (one for each issuer) that complemented the financial analysis I was conducting. An example can be found in Annex 4. The presentation started with an overview of the economic landscape in 2024 and expectations for 2025. This macroeconomic context helped frame the financial analysis of issuers, showing how external conditions might impact their performance and risk profile.

Each issuer analysis included a summary of their business activities, geographical exposure, and sales structure when available, followed by financial metrics from 2020 to 2024 – such as revenue, operating margin, net income, and leverage ratios. The main source for this analysis was the issuers' annual reports, complemented by news and market data from Bloomberg and other reputable sources.

A challenge I faced during this process was the limited availability of updated annual reports early in the year, especially for issuers whose fiscal year ends in December. This delayed access to complete financial data restricted the depth of some analyses, requiring me to rely more on market projections, interim data, and news to fill the gaps. To mitigate this, I continuously monitored for new releases and updated my work accordingly.

Credit ratings (short- and long-term) were also examined, supported by excerpts from Fitch reports to explain the agencies' reasoning. I included financial statements with commentary on key changes. For sovereign issuers, I focused on macroeconomic variables such as revenues, budget balance, trade balance, and GDP instead of corporate financials.

To benchmark performance, I compared each issuer's metrics with industry peers using indicators like ROE, ROA, operating margin, and leverage ratios. For financial institutions, I adapted the analysis to include banking-specific indicators, such as the Loan-to-Deposit Ratio and Tier 1 Capital Ratio.

I also included a section dedicated to the investment proposal, where I briefly explained the rationale behind the investment, the investment goal (expected returns), and the characteristics of the bond. Visual aids were provided to support a more informed investment decision, including a mid-yield performance chart generated using the Bloomberg GP (Line Chart) function, a screen capture from the Default Risk (DRSK) function, a comparable analysis chart generated with the Comparable Analysis (COMB) function, and an analysis of the G-Spread using the Relative Valuation (RV) function. These tools helped provide a clearer picture of the bond's performance and market positioning, supporting a well-founded investment decision. Please refer to the excel file in Annex 2 (Sheet Functions) which defines and explains the functions mentioned in this subsection.

The next sub-section describes the fourth phase of the internship.

5.4. 4th Phase – Preparation of the Investment Proposal

Before finishing my internship, I participated in one last project, an investment proposal to be presented to Executive Commission.

The ongoing military conflict between Russia and Ukraine, along with shifts in U.S. foreign policy, has intensified the urgency for the European Union to strengthen its security and defence and accelerate efforts to enhance European military capabilities. The President of the European Commission outlined the main pillars of her strategy for increasing defence spending, with a total estimated cost of approximately 800 billion euros (Henley, 2025).

Considering this context, the idea of investing in fixed-income securities within the defence sector, specifically European companies, emerged. In this respect I have been assigned with the analysis of five securities listed in Table 4.

TABLE 4 – List of Securities for Analysis

Issuer	Coupon	Rating	Maturity	Currency	Yield	Price
BAE Systems plc	5.00% semi-annual coupon	BBB+	26/03/2027	USD	4.45%	101.01%
Airbus	3.15% semi-annual coupon	A	10/04/2027	USD	4.41%	97.58%
Leonardo S.p.A.	2.375% annual coupon	BBB-	08/01/2026	EUR	2.51%	99.89%
Dassault Systèmes	0.375% annual coupon	A	16/09/2029	EUR	2.98%	89.23%
Thales S.A.	1.00% annual coupon	A2	15/05/2028	EUR	2.72%	94.92%

Source: Author's analysis

I began by analysing each bond individually in terms of credit rating (using the DES (description) function) and spread (specifically the G-Spread, using the RV function. Please find these functions described in Annex 2 (Sheet Functions). Additionally, I reviewed the financial statements of the respective issuers to assess their financial health. I also positioned these bonds along each issuer's curve to determine whether they were yielding efficiently, i.e., above or below the curve. As a result of this initial analysis, I suggested replacing one of the original bonds, Thales S.A. maturing on 15/05/2028, with another of a similar maturity, Thales S.A. maturing on 18/10/2028, that offered approximately 10 additional basis points and was above the curve. The remaining bonds were either aligned with or above the issuer curve.

Next, I compared these bonds against similar securities. Using the SRCH (search) function, I retrieved a universe of investment-grade bonds issued by European aerospace

and defence companies denominated in EUR, as well as a comparable set of bonds issued in USD. I then transferred this dataset to the FIW (fixed-income worksheet) function, which allowed me to construct charts analysing the credit spread and yield of these securities. Additionally, by using the CRVF (curve finder) function, we examined the spreads among issuers within the Industrials sector (which includes Aerospace & Defence) that were rated A and BBB, to better understand their performance relative to comparable securities. Please find these functions described in Annex 2 (Sheet Functions).

The conclusions drawn from this analysis are primarily linked to credit ratings, as the bonds analysed tended to have lower yields or lower spreads due to their stronger ratings compared to their peers. However, the spread differences were within the expected range for the sector, as confirmed by the curves obtained through the CRVF function for the respective maturities.

Lastly, I prepared a presentation (Annex 5) consisting of a PowerPoint file outlining the context behind the idea and the investment opportunity. A key element was a graph illustrating defence investment in Europe, which was particularly useful in framing the background of the idea. I also included a table summarising the characteristics of the bonds (issuer, name, yield, rating), the amount invested, the RWA coefficients, and the wallet allocation. Following this, I present graphs comparing spreads and yields against comparable securities, as well as similar analyses for the individual bonds themselves.

The investment proposal developed ultimately did not progress beyond the internal evaluation stage. This decision was influenced by heightened market volatility, largely driven by the international trade policies introduced by President Trump at the time. The geopolitical and economic environment created considerable uncertainty, prompting a strategic shift in focus. Rather than pursuing new investments, the priority became the reduction of market risk exposure. Consequently, the department opted to divest from certain instruments in order to preserve portfolio stability and maintain a more conservative risk posture.

The next section articulates the Master's curricular plan and the internship.

6. Articulation of The Curricular Plan of the Master's in Finance and The Internship

The main objective of Chapter 6 is to bridge the theoretical knowledge acquired during the academic part of the Master's in Finance at ISEG with the practical experiences I encountered during my internship. This section highlights the courses whose content I found most relevant to my day-to-day activities.

The Financial Analysis and Reporting course, taught by Professor Tiago Gonçalves, was fundamental during my internship, especially in the issuer analysis phase. During this process, I spent a significant amount of time analysing financial statements. The knowledge obtained in this course allowed me to assess financial ratios, providing a structured approach to evaluate the liquidity, profitability, and solvency (financial soundness) of different issuers. Understanding these financial indicators was crucial in evaluating the credit profile of issuing companies, ensuring that the investment decisions were deemed as good decisions. By applying these concepts in a real-world setting, I was able to refine my analytical skills and develop a more confident approach to assess the financial health of potential investments.

The Investment Portfolio Management course, taught by Professor Mia Hinnerich and Professor Bruno Fernandes, introduced me to concepts such as Market Efficiency Theory and portfolio management techniques. Experiencing the market in real time allowed me to observe how financial instruments react to macroeconomic events and geopolitical developments (Efficiency Theory).

For example, I closely followed market reactions to events such as Trump's tariff impositions and the volatility in major stock indices and individual stocks. Additionally, witnessing the market's response to the DeepSeek collapse provided a practical perspective on how unexpected events influence investor sentiment and portfolio adjustments.

Another takeaway was recognizing investor behaviour and biases in decision-making. I identified certain biases in myself, such as a preference for investing in well-known names, reinforcing the importance of objective analysis over familiarity. The course provided me with the necessary awareness to become precautious of these biases.

This course also provided me with a structured understanding of the portfolio management process, including risk profiling (conservative vs. aggressive investors) and different management strategies (active, passive, index tracking, etc.). These concepts became essential when analysing portfolio construction strategies during my internship.

The Financial Modelling in Excel workshop, taught by Professor Filipe Caldeira, was essential in equipping me with the skills needed to navigate Excel. During my internship, Excel was a very important instrument for visualising and analysing financial data. The workshop gave me a solid foundation in functions, and formulas which allowed me to work more efficiently and with greater ease. This proficiency was useful when conducting fixed-income analysis, tracking market movements, and structuring reports.

The Corporate Financial Planning course, taught by Professor Sumaira Ashraf, gave me an introduction for understanding treasury functions and how institutions manage excess liquidity. During my internship, I was able to observe how banks evaluate different options for deploying surplus funds, but still fulfilling the need to balance risk, return, and regulatory constraints.

The internship allowed me to see how the bank allocates its excess funds across different instruments, while taking into account risk factors such as counterparty risk, interest rate expectations, and regulatory capital requirements. This experience bridged theory and practice, as I was able to experience first-hand the decision process behind the allocation of excess funds.

The Fixed Income Products and Markets course, taught by Professor José Azevedo Pereira and Professor Sérgio Silva, gave me an extensive understanding of the structure of bond markets, and the different types of fixed-income instruments. This knowledge was all-important during my internship, since I was involved in evaluating fixed-income securities and, for that, I had to understand the dynamics of bond markets.

Another critical aspect of the course was understanding the relationship between inflation, interest rates, and fixed-income markets. This knowledge helped me assess how changes in macroeconomic conditions, such as inflation trends and, especially, central bank decisions, influence the pricing of bonds and the yield curve.

This internship also allowed me to further enhance my comprehension of the yield curve, namely, the dynamics of convexity and duration. I spent a lot of time observing

yield curve and their movements, both flattening and steepening, and discussing the reasons behind these movements with my internship supervisor.

The Fundamentals of Financial Economics course, taught by Professor Mariya Gubareva, provided a strong foundation in financial policy, economic variables, and macroeconomic dynamics, all of which were present in my day-to-day tasks. Understanding the mechanics of major economic indicators and their effect in broader economic tendencies allowed me to analyse financial markets more accurately and thoroughly.

An important takeaway was the role of monetary and fiscal policy in the economy and market conditions. Concepts such as GDP growth, inflation trends, interest rate movements, and FX dynamics became crucial when assessing sovereign issuers and interpreting market signals. This knowledge was useful in my weekly fixed-income reports. In these reports, I had to interpret economic indicators and translate how they shape investor expectations regarding inflation, economic growth, and monetary policy decisions.

The Risk Management course, taught by Professor Jorge Barros Luís, displayed insights that proved relevant during my internship, particularly in understanding the bank's risk appetite. BAE has a conservative risk profile, consequently, risk assessment plays a crucial role in defining the investment strategy of a conservative investor, favouring lower-risk assets and liquidity preservation.

Another important take was the materialization of the impact of banking regulation on risk management and treasury decisions. For instance, banks often choose to deposit overnight at the ECB, as these deposits have a RWA of 0, meaning they do not consume regulatory capital. Observing this decision-making process in practice bridged theoretical concepts with real-world applications.

The course also improved my capacity to analyse financial institutions and assess their stability. Understanding key financial ratios, such as Non-Performing Loans, gave me more confidence in evaluating financial statements and assessing the risk exposure of different institutions.

During my internship, I also witnessed a real-life event deemed as a "black swan" event by many news headlines. A black swan is an unexpected (highly improbable) event

with extreme consequences that lies outside regular expectations and is often, in hindsight, thought of as predictable, despite being unforeseen at the time it happened (Aven, 2013) – the DeepSeek collapse. Observing how market experts reacted to this highly improbable, and impactful event was a bridging theory/practice moment, reinforcing the importance of risk preparedness in financial markets.

Crucial aspects covered in the course included also credit ratings and rating agencies, which turned essential in my daily tasks. Due to their insights, they allowed me to better assess the financial soundness of issuers, which influenced the investment decisions. Understanding the meaning behind the ratings allowed me to interpret more effectively and incorporate them into fixed-income analysis.

The Databases in Finance workshop, taught by Professor Victor Barros and Professor Pedro Ramos, was an essential introduction to the Bloomberg Terminal, giving me the base knowledge much-needed to navigate this complex tool. Here, I was also introduced to the Bloomberg Excel Add-In, which made financial data extraction into Excel very fast and easier.

During my internship at BAE, the Bloomberg Terminal was the centre of my tasks and days, as most of the financial information I worked came from it. I used the Terminal for real-time market data, economic indicators, and company information, all of which were incorporated in fixed-income analysis, and generating reports. The Bloomberg Excel Add-In was useful for data retrieval and integrating in an automated form into the excel files and reports with ease.

Both experiences, the internship and the workshop, allowed me to become more familiarized with the Bloomberg Terminal, whose importance is undeniable for financial research. I also benefitted from the Bloomberg Lab of ISEG which is the biggest in the Iberian Peninsula, and where I got direct contact with the terminal before embracing the experience of the internship.

7. Conclusion

This MFW represents the end of a rigorous academic journey and a significant step in my transition from student to finance professional. This internship report aimed to bridge the gap between theory and practice in the finance industry. The answer to the main question of this report lies in the articulation between the Master's curricular plan

and the internship. This section is the proof that theory effectively applies itself in a real-world context.

One of the objectives of this internship was also to go beyond the technical scope. It does so by analysing the structure and activity of a TMD, specifically at BAE. The exposure I had to real life dynamics and their interconnectedness to theories and concepts, brought what I learned in academia into a practical context, reiterating the relevance of the master's curriculum and highlighting the value of applied learning.

Another important milestone achieved during this internship was an enhanced understanding of the influence of macroeconomic conditions in financial markets. By preparing weekly fixed income reports, I gained experience in tracking market developments, interpreting economic indicators, and translating them into investment-relevant insights. These tasks developed my analytical thinking, and my ability to communicate financial information clearly.

Issuer analysis was another key aspect of the internship. By assessing credit risk, I gained a stronger grasp of the nuances of distinct issuers from various industries. I also got to understand how risk assessments affect portfolio construction, particularly within a conservative, liquidity-focused strategy. These activities improved my technical proficiency in data handling and interpretation, reinforcing the importance of credit quality and risk management in fixed income investing.

Last, but not least importantly were the soft skills developed throughout this experience. Working in a professional environment demanded discipline, initiative, adaptability, and effective communication. These skills proved themselves to be an enriching complement to technical knowledge and played a significant part in shaping my mindset and readiness for future professional endeavours.

In sum, this internship report documents a structured learning process that bridged theory and practice, particularly, in fixed income portfolio management. This experience has deepened my interest in financial markets and strengthened both my technical capabilities and professional readiness.

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ANNEX 1 – Example of Weekly Report

Note: Annex 1 includes the table of contents and the first slide of a weekly fixed income report I prepared during my internship.. This document was presented internally every Friday and provides an overview of the main trends in global fixed income markets, including interest rates, credit spreads, macroeconomic indicators, and FX and commodity movements.

For any inquiries or to see the full document, please contact me at *l60576@aln.iseg.ulisboa.pt*.

ANNEX 2 – Portfolio Excel

ATLANTICO EUROPA

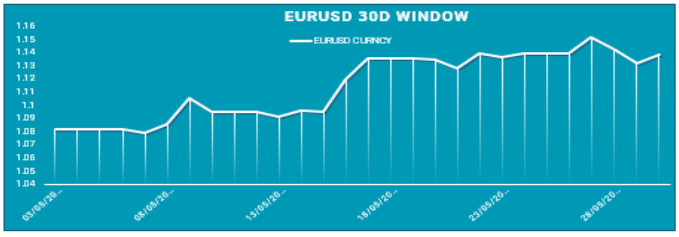
Portfolio Excel – Beatriz Freitas

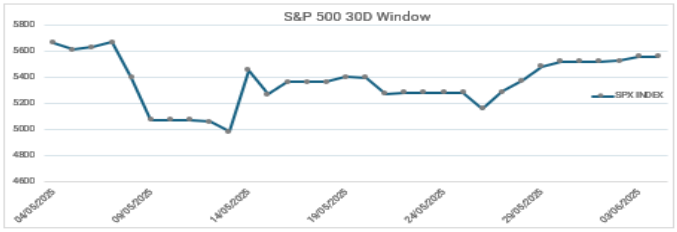
Table of Contents

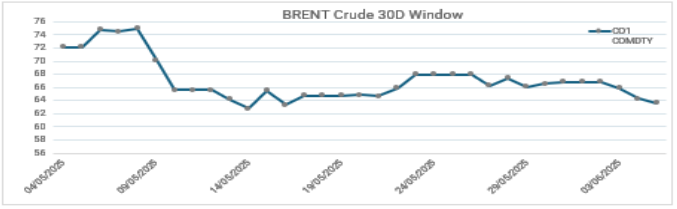
1 Cover Page
2 Portfolio Overview
3 Data Fields
4 Functions
6 Investment Critrria
7 Bloomberg Data
8* Pasted Values

* These values are the same as the ones in the sheet "Portfolio Overview". This sheet is directed to the viewerts who do not have the Bloomberg API and cannot correctly view the sheet "Portfolio Overview".

Equity				
Index	Price	ΔWTD	ΔMTD	ΔYTD
Eurostoxx 50	5180	0.50%	-1.30%	5.80%
S&P 500	5560.8	0.64%	-0.31%	-5.45%
FTSE	8473.5	0.76%	-1.20%	3.75%
Fx and Commodities				
Index	Price	ΔWTD	ΔMTD	ΔYTD
EUR/USD	1.1375	0.09%	-5.17%	3.86%
Oil WTI	59.96	-4.86%	-15.49%	-14.55%
Oil BRENT	63.63	-4.85%	-14.90%	-13.50%
Gold	3274.6	-1.36%	4.83%	24.77%
Fixed Income				
Index	Price	ΔWTD	ΔMTD	ΔYTD
Euribor 3M	2.18%	0.2	-16	-53.8
Euribor 6M	2.13%	-1	-20.5	-43.7
SOFR 3M	4.27%	-1.445	-2.196	-3.318
SOFR 6M	4.10%	-3.396	-9.302	-15.044
Bond Performance				
Index	Spread	ΔWTD	ΔMTD	ΔYTD
iTraxx Europe (IG)	67.14	1.07	3.20	3.49
iTraxx Europe (HY)	344.61	3.63	14.37	31.18
CDX (IG)	67.59	1.14	6.14	17.75
CDX (HY)	407.38	2.71	31.67	96.26
Sovereigns				
USA				
Tenor	Yield	WAP Sprea	ΔWTD	Δ 3Months
2 yr	3.65%	22.16	-22.63	-55.25
5 yr	3.76%	35.11	-26.67	-57.16
10 yr	4.15%	51.89	-23.27	-38.33
30 yr	4.62%	82.27	-20.50	-16.34
Germany				
Tenor	Yield	WAP Sprea	ΔWTD	Δ 3Months
2 yr	1.71%	-24.45	-3.35	-40.06
5 yr	2.01%	-12.72	-3.42	-22.04
10 yr	2.46%	1.83	-3.16	0.63
30 yr	2.83%	40.37	-1.54	18.25
Portegal				
Tenor	Yield	WAP Sprea	ΔWTD	Δ 3Months
2 yr	1.73%	-18.32	-4.46	-31.71
5 yr	2.24%	3.81	-4.07	-4.30
10 yr	3.02%	54.83	-2.56	15.13
30 yr	3.73%	126.67	-0.61	25.70
Spain				
Tenor	Yield	WAP Sprea	ΔWTD	Δ 3Months
2 yr	1.90%	-2.12	-2.66	-41.07
5 yr	2.38%	23.61	-3.28	-22.77
10 yr	3.13%	67.46	-3.32	6.58
30 yr	3.95%	148.59	-0.86	18.03
Italy				
Tenor	Yield	WAP Sprea	ΔWTD	Δ 3Months
2 yr	2.00%	4.35	-4.30	-152.15
5 yr	2.73%	23.61	-6.58	-74.35
10 yr	3.58%	67.46	-5.11	-33.57
30 yr	4.40%	148.59	-3.25	0.81



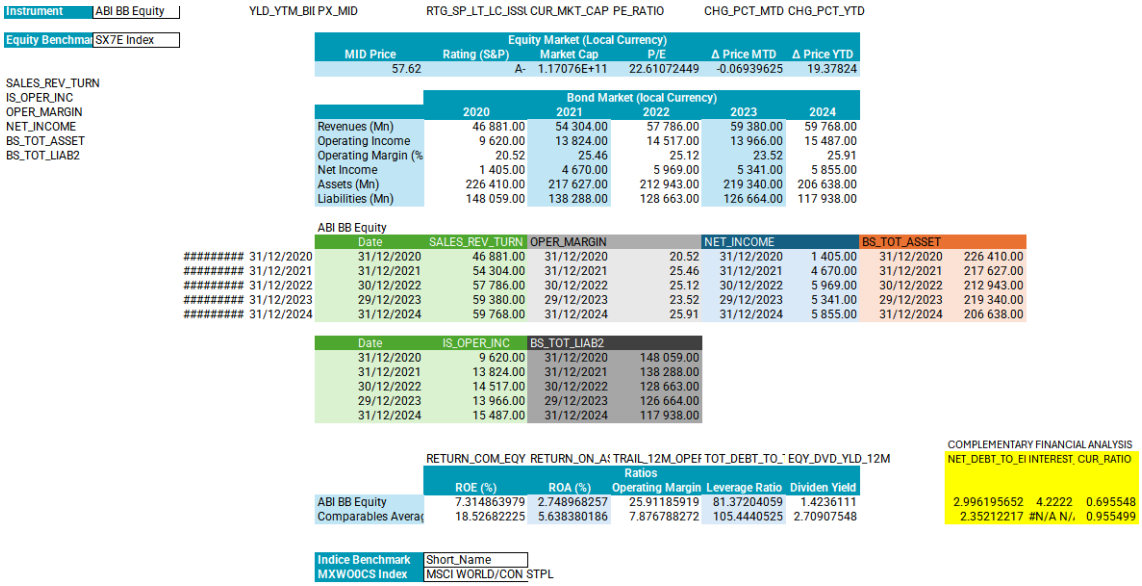




Note: Annex 2 includes the table of contents and a snapshot of the first sheet of the portfolio monitoring Excel file used during my internship.. This tool is designed to track and analyse key market indicators such as yield curves, benchmark rates, credit spreads, and FX movements. It consolidates Bloomberg and external data to support portfolio valuation and decision-making.

For any inquiries or to see the full document, please contact me at *l60576@aln.iseg.ulisboa.pt*.

ANNEX 3 – Issuer Analysis Excel



Instrument	ABI BB Equity
Equity Benchmar	SX7E Index

SALES_REV_TURN
IS_OPER_INC
OPER_MARGIN
NET_INCOME
BS_TOT_ASSET
BS_TOT_LIAB2

YLD_YTM_BII PX_MID RTG_SP_LT_LC_ISSU CUR_MKT_CAP PE_RATIO CHG_PCT_MTD CHG_PCT_YTD

Equity Market (Local Currency)					
MID Price	Rating (S&P)	Market Cap	P/E	Δ Price MTD	Δ Price YTD
57.62	A-	1.17076E+11	22.61072449	-0.06939625	19.37824

Bond Market (local Currency)					
	2020	2021	2022	2023	2024
Revenues (Mn)	46 881.00	54 304.00	57 786.00	59 380.00	59 768.00
Operating Income	9 620.00	13 824.00	14 517.00	13 966.00	15 487.00
Operating Margin (%	20.52	25.46	25.12	23.52	25.91
Net Income	1 405.00	4 670.00	5 969.00	5 341.00	5 855.00
Assets (Mn)	226 410.00	217 627.00	212 943.00	219 340.00	206 638.00
Liabilities (Mn)	148 059.00	138 288.00	128 663.00	126 664.00	117 938.00

ABI BB Equity

	Date	SALES_REV_TURN	OPER_MARGIN		NET_INCOME		BS_TOT_ASSET	
#########	31/12/2020	31/12/2020	46 881.00	31/12/2020	20.52	31/12/2020	1 405.00	31/12/2020	226 410.00
#########	31/12/2021	31/12/2021	54 304.00	31/12/2021	25.46	31/12/2021	4 670.00	31/12/2021	217 627.00
#########	31/12/2022	30/12/2022	57 786.00	30/12/2022	25.12	30/12/2022	5 969.00	30/12/2022	212 943.00
#########	31/12/2023	29/12/2023	59 380.00	29/12/2023	23.52	29/12/2023	5 341.00	29/12/2023	219 340.00
#########	31/12/2024	31/12/2024	59 768.00	31/12/2024	25.91	31/12/2024	5 855.00	31/12/2024	206 638.00

Date	IS_OPER_INC	BS_TOT_LIAB2	
31/12/2020	9 620.00	31/12/2020	148 059.00
31/12/2021	13 824.00	31/12/2021	138 288.00
30/12/2022	14 517.00	30/12/2022	128 663.00
29/12/2023	13 966.00	29/12/2023	126 664.00
31/12/2024	15 487.00	31/12/2024	117 938.00

RETURN_COM_EQY RETURN_ON_A TRAIL_12M_OPEF TOT_DEBT_TO_ EQY_DVD_YLD_12M

Ratios					
	ROE (%)	ROA (%)	Operating Margin	Leverage Ratio	Dividen Yield
ABI BB Equity	7.314863979	2.748968257	25.91185919	81.37204059	1.4236111
Comparables Averag	18.52682225	5.638380186	7.876788272	105.4440525	2.70907548

COMPLEMENTARY FINANCIAL ANALYSIS

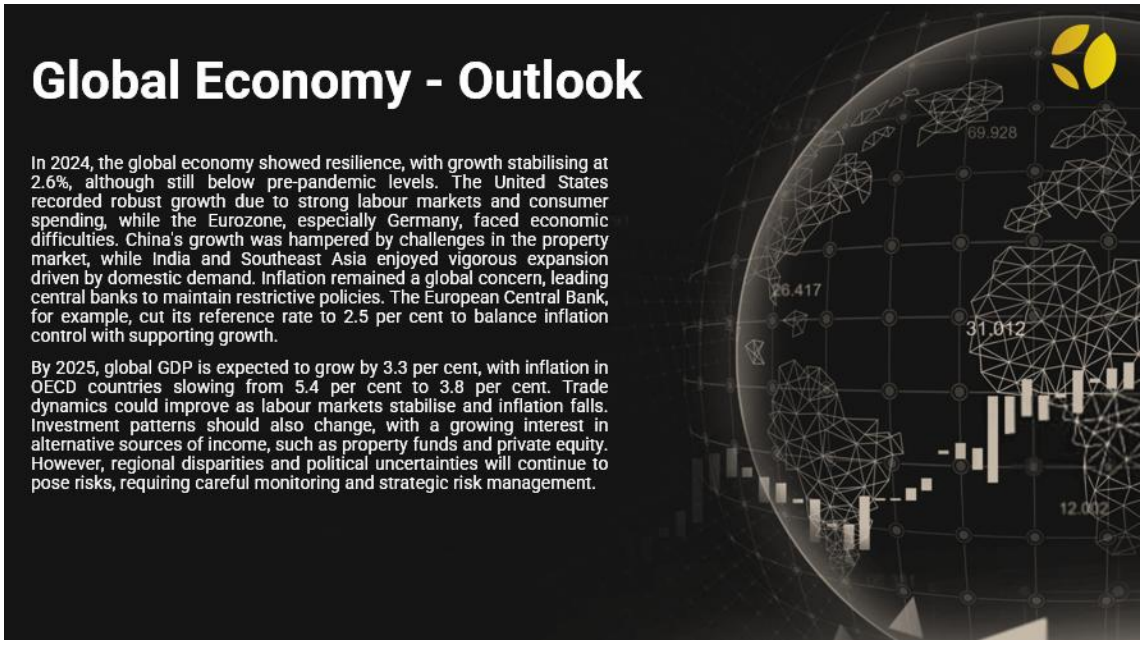
NET_DEBT_TO_EI	INTEREST_CUR_RATIO	
2.996195652	4.2222	0.695548
2.35212217	#N/A N/A	0.955499

Indice Benchmark	Short_Name
MXW00CS Index	MSCI WORLD/CON STPL

Note: Annex 3 includes a snapshot of the Excel file developed to support the issuer analysis conducted during my internship. This file contains key financial and operational metrics such as ROE, ROA, leverage ratios, net debt to EBITDA, sales, and operating costs. It serves as the quantitative foundation for credit assessment and investment decisions.

For any inquiries or to see the full document, please contact me at *l60576@aln.iseg.ulisboa.pt*.

ANNEX 4 – Issuer Analysis Document



Note: Annex 4 includes the table of contents and the first slide of an issuer analysis presentation prepared during my internship. This presentation aims to assess the credit profile and market positioning of a selected issuer, supporting investment decisions within the fixed income portfolio. The analysis considers financial metrics, credit ratings, sector dynamics, and recent developments.

For any inquiries or to see the full document, please contact me at *l60576@aln.iseg.ulisboa.pt*.

ANNEX 5 – Investment Proposal of Defence Sector

OPERATION PROPOSAL – Purchase of Defence Sector

T.1. Investment Rationale

Opportunity: We intend to invest 3 Mio EUR and 2 Mio USD in defence sector bonds (European companies) with maturities between 2026 and 2028.

Russia's war against Ukraine and changes in US foreign policy have intensified the urgency with which the European Union (EU) must strengthen its security and defence and accelerate efforts to reinforce European military capabilities. Europe is prepared to strongly increase its investment in defence, given the short-term urgency of supporting Ukraine, and the long-term objective of ensuring our own security

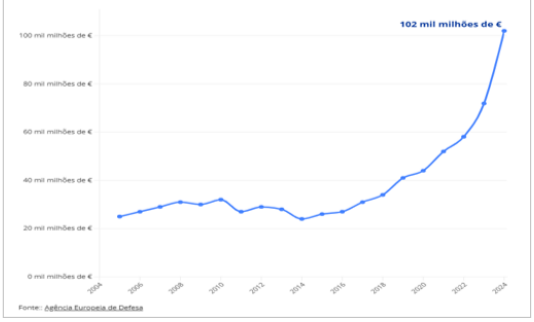
Von der Leyen's plan to rearm Europe costs 800 billion euros. The President of the European Commission outlined her strategy for increasing defence spending, using national coffers, the EU budget and the European Investment Bank.

Bonds:

Bods and amounts we are considering:

Issuer	Bond	Amount	Yield	Rating	RWA	Accounting Portfolio
LEONARDO SPA	LDOIM 2.375 01/08/26 GMTN	1 Mio EUR	2,65%	BBB-	100 %	HTCS
DASSAULT SYSTEME	DSYFP 0.375 09/16/29	1 Mio EUR	2,89%	A	50%	HTCS
THALES SA	HOFP 4.125 10/18/28 EMTN	1 Mio EUR	2,79%	A2	20%	HTCS
AIRBUS SE	AIRFP 3.15 04/10/27 REGS	1 Mio USD	4,26%	A	50%	HTCS
BAE SYSTEMS PLC	BALN 5 03/26/27 REGS	1 Mio USD	4,58%	BBB+	100 %	HTCS

T.2. Investment in Defense (2005-2024) in Europe



Fonte: Agência Europeia de Defesa

T.3. Proposal and Decision

Proposal:

Purchase of bonds LDOIM 2.375 01/08/26 GMTN, DSYFP 0.375 09/16/29, HOFP 4.125 10/18/28 EMTN, AIRFP 3.15 04/10/27 REGS, BALN 5 03/26/27 REGS in order to secure some portfolio income.

EC Decision: **Signatures:**

- APPROVED ☐
- FAILED ☐
- APPROVED WITH CHANGES ☐

Date: 23ABR2025

Proposal valid for 30 days after authorisation by the Credit Committee, if rejected it expires.

Changes:

T.3. Spread Analysis EUR

T.4. Yield Analysis EUR

T.5. Spread Analysis USD

T.6. Yield Analysis USD

Note: Annex 5 includes snapshots of the investment rationale and the spread and yield analysis sections from an investment proposal developed during my internship. This proposal evaluates a fixed income investment opportunity in the defence sector, focusing on creditworthiness, market positioning, and relative value. My contribution involved

analysing issuer fundamentals, comparing spreads and yields, and helping structure the investment case to support internal decision-making.

For any inquiries or to see the full document, please contact me at *l60576@aln.iseg.ulisboa.pt*.