Lisbon School of Economics & Management
Universidade de Lisboa

MASTER OF SCIENCE IN
FINANCE

MASTERS FINAL WORK
PROJECT

INVESTMENT POLICY STATEMENT:
MARCO ROSSI

LUDOVICO GUZZONI SALERI

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PROFESSOR PEDRO RINO VIEIRA

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Abstract

The Investment Policy Statement (IPS) serves as a crucial communication tool between the advisor and the client, clearly delineating the advisor's responsibilities. These responsibilities encompass establishing the IPS, delivering progress reports, managing asset allocation, mitigating risks, and ensuring compliance with CFA rules. The client has a moderately conservative risk tolerance, emphasizing capital preservation with limited risk-taking. The client has specific restrictions, prohibiting the use of leverage, short selling, and investments in non-regulated assets such as cryptocurrencies. Additionally, the client has no specific liquidity needs. The main investment goal is to grow the initial capital of €50,000 to €95,000 over a 15-year horizon. Adjusting for inflation, the target amount is €129,750.7, requiring a minimum annualized return of 6.45%.

The investment philosophy is structured using Value Investing and market timing, primarily with Exchange-Traded Funds (ETFs). Various security selection rules have also been adopted to align with this philosophy. To manage the portfolio effectively, the expected return and volatility were computed using Mean-Variance Theory (MVT) to maximize the Sharpe Ratio. This resulted in an average annualized return of 11.046% and an average annualized volatility of 8%. Lastly a risk analysis was performed, employing Value-at-Risk (VaR) and Expected Shortfall to assess potential 15-year horizon risks.

JEL classification:C6; G11;

Keywords: Portfolio Theory; IPS; ETF; Value Investing; Market Timing; Risk Analysis;

Resumo

Uma declaração de Política de Investimento/Investment Policy Statement (DPI/IPS) serve como uma ferramenta de comunicação crucial entre o consultor e o cliente, delineando de uma forma clara as responsabilidades do consultor financeiro. As responsabilidades do consultor incluem a construção da DPI, a entrega de relatórios de progresso, a gestão da alocação de activos, a mitigação de riscos e a garantia de conformidade com as regras da CFA.

O cliente tem uma tolerância ao risco moderadamente conservadora, realçando a importância da preservação do capital com uma tomada de risco limitada. O cliente tem restrições especificas, nomeadamente a proibição de venda a descoberto (short-selling), a proibição do uso de dívida e do investimentos em ativos não regulamentados, tais como criptomoedas. Adicionalmente, o cliente não apresenta quaisquer necessidades especificas de liquidez.

O principal objetivo do investimento é aumentar o capital inicial de €50,000 para €95,000 ao longo de um horizonte de 15 anos. Ajustado à inflação, o montante-alvo é de €129,750.7, exigindo um retorno anual mínimo de 6,45%.

A filosofia de investimento está estruturada com base no Value Investing e no market timing, principalmente com Exchange Traded Funds (ETF). posteriormente, foram adotadas várias regras para a seleção de ativos que vão em conformidade com com as filosofias anteriores.

Para gerir eficazmente a carteira, a rendibilidade e a volatilidade esperadas foram calculadas utilizando a teoria da Variância-Média (MVT) para maximizar o indice de Sharpe. O resultado foi uma rendibilidade média anual de 11,046% e uma volatilidade média anual de 8%.

Por último, foi efectuada uma análise de risco, utilizando o Valor em Risco (Value-at-Risk, VaR) e a Expectativa Condicional de Perda (Expected Shortfall) para avaliar os riscos potenciais num horizonte de 15 anos.

Classificação:C6; G11;

Palavras-Chave: Keywords: Portfolio Theory; IPS; ETF; Value Investing; Market Timing; Risk Analysis;

Abbreviations

AI Artificial Intelligence
AUM Assets Under Management
CFA Chartered Financial Analyst
CVaR Conditional Value at Risk
ECB European Central Bank
EF Efficient Frontier
EPS Earnings per Share
ESG Environmental, Social, and Governance
ETF Exchanged Traded Funds
FED Federal Reserve
IPS Investment Policy Statement
MFW Master's Final Work
MPT Modern Portfolio Theory
MV Minimum Variance
MVT Mean Variance Theory
NAV Net Asset Value
PE Price to Earnings
REITs Real Estate Investment Trusts
SR Sharpe Ratio
TER Total Expense Ratio
US United States
USD United States Dollar
VaR Value at Risk

Acknowledgments

I would like to express my heartfelt gratitude to my family for their unwavering support. To all my friends, especially those I met during this master's journey, thank you for making this experience truly memorable. Moving abroad was challenging at first, but in the end, every effort was worth it.

Finally, I am deeply grateful to all the professors who enabled me to join this Master's program and become part of this incredible institution. A special thank you goes to my supervisor, Professor Pedro Rino Vieira, for all his advice and support throughout the process of writing this MFW.

Thank you all!

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1. Introduction

As an investor, it's crucial to have a clear and well-defined investment strategy that aligns with your financial goals, risk tolerance, and time horizon. An Investment Policy Statement (IPS) serves as a foundational document that outlines your investment objectives, risk parameters, and guidelines for managing your portfolio effectively.

The purpose of this IPS is to provide a comprehensive framework for making investment decisions and to serve as a reference point for evaluating the performance of your investment portfolio over time. By establishing clear guidelines and objectives upfront, the IPS aims to ensure that your investment strategy remains disciplined and focused, even in the face of market volatility or changing financial circumstances.

In this document, we will develop your investment goals, risk preferences, and constraints, as well as the asset allocation and investment strategies that will be employed to achieve those goals.

2. Executive Summary

2.1 Scope and Purpose

The financial advisor utilizes the IPS for client communication, enhancing it with input from tax and legal advisors. The advisor communicates any changes or breaches to clients, obtaining their final approval for the IPS and its modifications. Operating as a fiduciary, the advisor provides impartial guidance, discloses potential conflicts of interest, and adheres to CFA regulations.

2.2 Governance

To attain optimal outcomes, the IPS delineates distinct responsibilities. The advisor is tasked with formulating and sustaining the IPS, providing progress updates, and suggesting solutions, whereas clients are responsible for regularly reviewing the IPS. The advisor proposes asset allocation decisions, contingent upon client approval. Risk management and monitoring fall under the purview of the advisor.

2.3 Investment Return and Risk

The Investment Policy Statement (IPS) sets a 15-year horizon with a 6.45% minimum return goal. Aligned with a moderately conservative risk tolerance, the portfolio, constructed using Markowitz's Mean-Variance Theory, aims to maximize the Sharpe ratio. Anticipated annual returns stand at 8.30%, tailored to meet the investor's financial objectives.

2.4 Risk Management

The IPS advisor systematically manages risks through assessment and strategies like diversification. In addition he addresses disparities, provides quarterly updates, and ensures alignment with defined risk tolerance through continuous monitoring. Proposed adjustments need client approval, emphasizing transparent communication for a clear understanding of risk exposure.

3. Investment Policy Statement

3.1 Scope and Purpose

This Investment Policy Statement (IPS) functions as a transparent communication tool facilitating dialogue between the financial advisor and the client, Mr. Rossi. Its primary objective is to assist the client in gaining a comprehensive understanding of their investment goals and objectives. The various sections of this IPS delineate the client's investment program by:

1. Articulating a written statement encompassing the client's attitudes, expectations, objectives, and guidelines governing the investment of all client assets.

2. Cultivating effective communication among the client and all stakeholders involved in investment management decisions.

3. Establishing formal criteria for the ongoing selection, monitoring, evaluation, and comparison of the performance results achieved by each investment option.

4. Ensuring compliance with all applicable laws, rules, and regulations emanating from various local, state, federal, and international political entities that may impact the client.

It is important to note that this IPS does not constitute a contractual agreement. Legal counsel has not scrutinized this investment policy statement, and its utilization is at the discretion of the Advisor and the Company. The IPS is intended as a concise summary of an investment philosophy and the procedures guiding the company and the advisor. Regular reviews and revisions of these policies will be conducted quarterly to ensure their alignment with any changes related to the portfolio, the investor, or the capital markets. It is acknowledged that there can be no guarantee regarding the attainment of the goals or investment objectives outlined herein.

3.1.1 Context and Investor

Marco Rossi, a 35-year-old employee of a multinational company residing in Italy, aims to secure his children’s future education by crafting a comprehensive Investment Policy Statement (IPS). Alongside his wife, employed in a bank, they manage a consistent monthly household income of €3,000, with a specific focus on their 3 and

1-year-old sons' educational future. Marco, exhibiting a moderately conservative risk profile, possesses foundational financial knowledge, contributing to his informed decision-making. His investment objectives revolve around the disciplined allocation of €50,000. The primary goal is to attain a financial milestone of at least €95,000 over the investment horizon of 15 years. To enhance potential returns, Marco plans to allocate €25,000 to more high-risk assets and the remainder to less risky options. The family's readiness for unforeseen events is apparent in their €10,000 emergency fund, ensuring financial stability during unexpected circumstances.

3.1.2 Structure

The Investment Policy Statement (IPS) for Marco Rossi is crafted to align with his specific financial objectives and risk preferences. It presents a thorough examination of his financial background, encompassing details such as his monthly income, occupation, and emergency fund alongside his wife's employment. The IPS centers around a 15-year investment horizon, dedicated to securing funds for Marco's 3-year-old and 1-year-old kids' education. This timeframe is a pivotal element in shaping the IPS strategy.

The document outlines a systematic investment plan, featuring an initial lump sum of €50,000. Marco's moderately conservative risk profile takes precedence in guiding the asset allocation strategy.

The IPS emphasizes a hands-off methodology, ensuring that the invested capital remains untouched for the specified 15-year period. The overarching structure aims to offer a transparent and comprehensive overview, guiding Marco towards the attainment of the targeted portfolio value and supporting his aspirations for his children's education.

3.2 Governance

To achieve the optimal outcome for the client as outlined in this Investment Policy Statement (IPS), the financial advisor must clearly delineate their responsibilities and duties, along with corresponding client commitments, to enhance overall efficiency.

The financial advisor assumes the responsibility of formulating, executing, and upholding the IPS. Additionally, they are tasked with reporting the progress of the investments to the client and proposing options for rectifying any deviations. Quarterly assessments of the IPS's performance are conducted, with recommendations for changes if deemed necessary. Clients regularly review the IPS to ensure alignment with their preferences.

Granting the advisor unique authority, clients authorize them to appoint and terminate individuals and/or entities responsible for managing their investment assets.

Concerning asset allocation, the advisor provides recommendations on optimal financial assets and their allocations to fulfil the specified objectives. An annual rebalance of the asset allocation occurs, with proposed changes subject to the client's final approval. The advisor discloses the proportions of investment in each asset class, expected returns, correlations of returns, anticipated changes in inflation rate and marginal tax rate. ETFs constitute the primary asset class for investment, and the proportion of all sub-classes (equities, fixed income, commodities, and any other alternative investments) must be disclosed.

The advisor bears the responsibility of continual evaluation and monitoring of investment-related risks. They furnish a quarterly financial report, serving as the official record of the investment policy and the foundation for risk evaluations. The advisor identifies variances in risk positions and reassesses the clients' risk classification/profile to rectify any exceeding tolerable limits.

3.3 Investment, Return and Risk Objectives

3.3.1 Investment Objective

The primary objective of the Investment Portfolio Statement (IPS) is to produce a minimum return of €95,000 within a 15-year timeframe, aiming to fund the client's kids' future educational expenses, all while maintaining a pre-determined level of risk.

3.3.2 Return, Distribution and Risk Requirements

In terms of overall investment performance, to achieve the target in 15 years, a required minimum annual real rate of return of 6.45% is necessary. According to Statista the average inflation rate in Italy is forecasted to continue its decrease until 2028, reaching an estimated rate of 2% in 2028. Considering the European Union target of 2% for the inflation rate, the advisor will assume a conservative inflation forecast of 2.10% for the entire period. Given the projected average inflation rate of 2.10% over the next 15 years, and with the objective of safeguarding the client's purchasing power, the initial target of €95,000 will need to be adjusted to €129,750.7. Consequently, by capitalizing the invested amount at a rate of 8.30% over the same period, the investment is anticipated to not only meet but exceed the set target.

However to achieve the €95,000 target is required a rate of 6.45%. In the pursuit of an optimized investment strategy, the investor may seek to maximize the Sharpe ratio, therefore emphasizing the importance of achieving superior risk-adjusted returns.

3.3.3 Portfolio Policy

The asset allocation strategy is outlined in paragraph 4.2.2 and will be subject to regular evaluations through consultations between advisors and clients. Adhering to the first constraint that dictates 50% of the initial capital (totaling €25,000) will be dedicated to risky Assets (Equities and Alternative investments) and the remaining €25,000 will be invested in Fixed Income assets, constituting the remaining 50%.

The advisor is required to follow the asset allocation strategy. At the conclusion of each quarter, the investment manager needs to provide a report to the client. This report should detail the present asset allocations and confirm that the allocations executed during the quarter adhered to the authorized limits.

3.3.4 Investor’s Risk Tolerance

The Investment Policy Statement (IPS) is expected to articulate the investor's perspective on risk, recognizing that the portfolio may face various risks such as liquidity, legal, political, regulatory, longevity, mortality, business, and health risks.

These factors contribute to potential fluctuations in returns over time. The IPS should also define acceptable risk levels and address any known liabilities.

Considering the client's ability to withstand risks, given their extended investment horizon, there exists ample opportunity for potential recovery from losses. Furthermore, the client does not have immediate liquidity requirements and does not anticipate needing the invested capital in the short term, thanks to a stable professional life, substantial wealth (assets exceeding liabilities), an expected 25-year salary stream, and an emergency fund of €10,000. The client maintains a relatively conservative lifestyle.

As per Charles Schwab's risk tolerance questionnaire outlined in Appendix 2, the client demonstrates a risk tolerance that is moderately conservative, leaning towards the moderate side of the risk spectrum. Stability and capital preservation are key priorities for the client, seeking modest returns with lower volatility compared to the broader equity market. The client's risk willingness represents a balanced stance, comfortable with accepting some market risk but favoring more stable investments to prevent significant stress. Their ability to take risk is guided by their financial capacity to withstand potential losses without compromising long-term objectives, focusing on protecting principal investments and achieving steady growth. The moderately conservative allocation is projected to yield an average annual return of 8.3%, with 50% allocated to fixed income while the proposed portfolio, detailed in Figure 7, has an average annual return of 11.046% with 50% invested in low risk assets.

In summary, the client can be characterized as a moderately conservative investor in terms of risk tolerance, displaying both a moderate ability and willingness to assume risk.

3.3.5 Relevant Constraints

The investment advisor is tasked with delivering Marco Rossi a quarterly report providing a performance overview for each asset category.

In light of the client's investment goals, specifically funding his sons’ higher education expenses, the investor's liquidity time horizon spans 15 years, with a minimum

financial target of €95,000. Additionally, the client prohibits the use of leverage strategies, cash investments, and involvement in non-regulated financial products.

The investment activities will primarily involve ETFs. When engaging in transactions with this type of financial product, there are various fees and commissions that may be applicable, and these will be addressed in the chapter 3.1.

The constraints within the investment strategy, as outlined in Appendix 1, stipulate an initial capital of €50,000. Out of this amount, €25,000 is earmarked for high-risk asset investments, while the remaining portion is directed towards a secure and moderately conservative investment approach.

For an Italian resident, the taxation of income generated by an investment portfolio is subject to the following key regulations: the capital gains tax rate is set at 26% and also both dividends and interest are subject to a flat tax rate of 26%.

Generally, capital income generated by foreign government bonds is taxed in the country of tax residence of the bondholder. According to the Italian law, the securities issued by the states included in the whitelist referred to in the Ministerial Decree of September 4, 1996, and subsequent amendments and additions, are treated the same as Italian government securities for both interest and capital gains. This mean that they can benefit from a lower taxation of 12,5%.

3.4 Risk Management

The advisor will assess the performance of each asset individually, along with the overall performance of the recommended portfolio. A detailed report, aligned with the Global Investment Performance Standards set by the CFA Institute, will be delivered by the conclusion of each quarter. Acting as the designated advisor for clients, continuous evaluation and monitoring of potential risks associated with their investments are integral responsibilities.

Empowered to create a quarterly financial report, this document serves as the official record of clients' investment policies and forms the basis for risk evaluations. Furthermore, the advisor actively identifies any inconsistencies in risk positions, conducting a re-evaluation of their risk classification/profile. Immediate corrective actions are taken if there are deviations beyond tolerable limits.

In addition to performance reporting, the advisor commits to providing clients with quarterly updates on specific risk metrics. These encompass the annualized standard deviation of portfolio returns, the Sharpe Ratio, as well as both Value at Risk (VaR) and Conditional VaR.

Commencing each year, the advisor conducts a review of asset allocation, proposing adjustments as necessary to sustain the desired allocation and minimize risks. Crucially, the rebalancing process is initiated only after securing explicit approval from clients. This proactive approach ensures that clients' portfolios remain aligned with their objectives while maintaining a risk profile within their tolerance.

4 Investment Design

4.1 Investment Philosophy

An investment philosophy is a personalized framework of beliefs guiding an investor's approach to financial markets. It adapts to goals, risk tolerance, and time horizon, providing clarity amidst uncertainty. It informs strategies, asset allocation, and risk management, fostering discipline and resilience against market volatility. Ultimately, it serves as the foundation for a coherent and consistent investment strategy aimed at achieving long-term financial objectives. This philosophy encompasses a deep understanding of market dynamics, acknowledging both its efficiencies and inefficiencies, as well as recognizing the recurring patterns in investor behaviour.

The philosophy attributed to this IPS will focus on Value Investing and market timing, exploiting ETFs as main asset. Stocks, Bonds and alternative Investments will also take part into it.

Value investing is an investment strategy that focuses on identifying undervalued assets in the market, while market timing refers to a strategy through which a market participant makes buying or selling decisions by trying to anticipate price movements of a financial asset in the future. Value investors hold the conviction that market reactions to positive or negative news are often inflated, leading to stock price

fluctuations that don't accurately reflect a company's long-term fundamentals. This overreaction presents an opportunity for investors to capitalize on discounted stock prices. These stocks typically develop stable business models, achieving modest increases in revenue while maintaining undervalued share prices compared to their anticipated future value (Akinde et al., 2019).

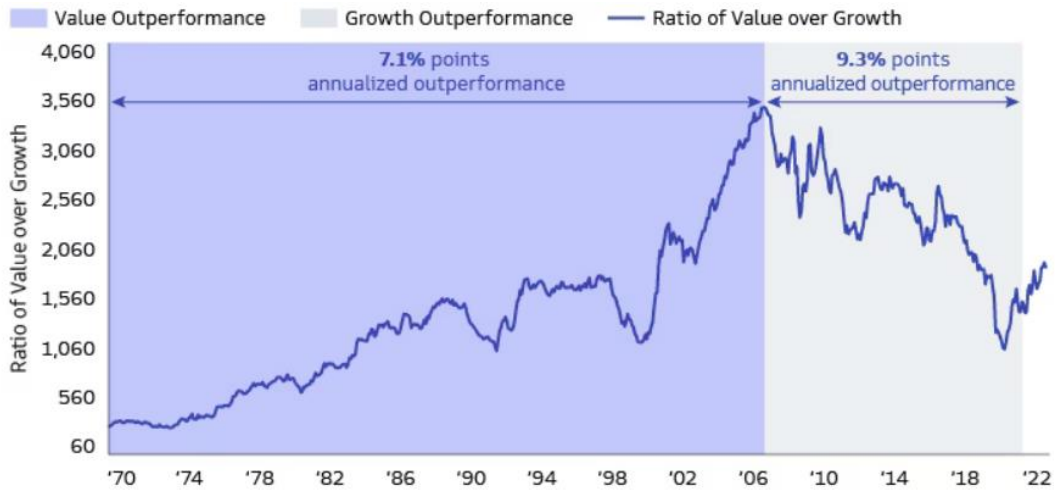
Benjamin Graham is considered the founder of value investing philosophy and its principles (1946), together with his student Warren Buffet.

This strategy depend also on the global economy trends: many researches established that in periods of expensive capital, such as when inflation rates are high and central banks raise rates, investors often favor companies with shorter duration, namely Value stocks, while the opposite happens with growth stocks. (Figure 1)

Growth stocks tend to derive a larger portion of their value from cash flows projected further into the future, making them more sensitive to changes in interest rates, which influence the denominator in the discounted cash flow calculation. Value stocks are not helped as much by lower interest rates because value firms are typically expected to generate profits over a shorter time horizon and for this are less sensitive to interest rate fluctuations.

According to Price (2023) a return to exceedingly low interest rates seems improbable in the close future. Although inflation is expected to decrease from current levels, the onshoring and "near shoring" of supply chains suggest we could enter in a new era where inflation remains elevated for an extended duration due to deglobalization. This trend could make it challenging for companies to mitigate labor and raw material costs. Consequently, if this scenario unfolds, interest rates are likely to remain high compared to recent years. In environments with elevated rates, present earnings typically gain significance while future earnings diminish, thereby, as said before, favoring value stocks.

Figure 1: Historical Perspective of Value vs. Growth: Secular Trends



Source: Kenneth R. French, Bloomberg and Goldman Sachs Asset Management. As of March 9, 2023. Data from January 1970 to January 2023. The ratio of Value over Growth is defined as the ratio of Fama/French H20 portfolio formed on Book-to-Market factor and Fama/French L20 portfolio formed on Book-to-Market factor. Value regime is defined as the period between January 1970 to February 2007. Growth regime is defined as the period between March 2007 and September 2020.

The strategy that will be used to pick the stocks to match this Investment Philosophy will follow Benjamin Graham's principle, which are:

1) Criteria: Quality Rating

There will be a focus on stocks with an S&P Earnings and Dividend Rating of B+ or better. This rating ensures that we're considering companies with at least an average quality, if not better. By sticking to this criterion, we aim to select stocks that are relatively safe investments.

2) Criteria: Debt to Current Asset ratio

Companies with debt exceeding 110% of net current assets will be avoided, especially focusing on industrial companies. By prioritizing companies with lower debt loads relative to their current assets, we aim to select investments that are more likely to weather turbulent times and maintain sustainability.

3) Criteria: Company’s Liquidity

In line with Value investing principles, we'll look for companies with a current ratio of at least 1.50, indicating that their current assets are at least 1.5 times their current liabilities. This ratio is crucial as it reflects the company's ability to cover its short-term liabilities.

4) Criteria: Earnings Growth

We will select companies with positive earnings per share (EPS) growth over the past five years. By focusing on companies that have consistently increased their earnings year after year without any deficits, we prioritize investments in the safest companies within a particular industry or sector.

5) Criteria: P/E ratio

EPS reflects a company's profitability, while the Price to Earnings Ratio (P/E) compares EPS to the company's share price. The key is to target companies with a P/E Ratio of 15.0 or lower. Such companies are often undervalued, indicating that their share prices are relatively low compared to their earnings potential.

It's essential to note that this criterion does not apply to high-growth companies, and P/E ratios can vary across sectors and industries. Therefore, it's crucial to compare the P/E ratios of the target company with those of its competitors before making a decision. This ensures a comprehensive assessment of the company's valuation relative to its peers in the industry.

6) Criteria: P/BV ratio

Focusing on companies with a price-to-book value (P/BV) ratio less than 1.20 aligns with a value investing approach. The P/BV ratio compares a company's current share price to its book value per share, providing insight into the stock's relative

valuation. Investing in stocks selling near or below their book value can be advantageous from a value investing perspective, as it may indicate that the stock is undervalued relative to its intrinsic worth.

7) Criteria: Dividends

Investing in companies that pay dividends is a timeless strategy advocated by great investors like Benjamin Graham and Warren Buffett. Dividend-paying companies provide shareholders with a source of passive income, which can be particularly valuable during periods of stock market volatility.

In analysing Fixed Income products, the strategy will consists into comparing their actual yield with the average yield for similar ratings. When the actual yield exceeds the average for its rating category, it suggests the product may be undervalued, potentially signalling an opportunity for capital appreciation. Conversely, if the actual yield is lower, it may indicate that the product is overvalued. This approach helps investors gauge relative value within the fixed income market and make informed investment decisions. These products will be added to the portfolio using ETFs but the strategy remains the same: compare the actual yield of each bond ETF with the average yield for its respective rating category. If the actual yield exceeds the average yield for its rating category, it suggests that the ETF may be undervalued and vice-versa.

However for Alternative Investments the strategy will depend on forecasts for the next years which will be discussed further in the next chapter about the macroeconomic outlook.

This IPS will be built mainly using ETFs as financial product; ETFs, also called Exchange-Traded Funds, are a form of pooled investment security that can be traded similarly to a stock. They can include stocks, bonds, commodities and other type of

alternative investments, moreover they can be structured to replicate specific investment approaches or strategies.

These type of securities have become so popular because of their unique characteristics:

1) Accessibility; they can be bought and sold through brokerage accounts, making them easily accessible to investors of all sizes.

2) Transparency; ETFs always disclose their holdings, allowing investors to know exactly what assets they own.

3) Low costs; they often have lower expense ratios (TER) compared to traditional funds. They typically passively track an index rather than employing active management, resulting in lower management fees.

4) Diversification; these products contain a portfolio of securities, offering diversification within a single investment. This reduces risk allowing for the distribution of exposure across various sectors, regions, or asset classes, depending on the ETF's focus.

In the next chapters will be showed relevant data and information that will be used to build the portfolio.

4.2 Strategic Asset Allocation

Strategic asset allocation constitutes a portfolio approach wherein the investor establishes target allocations for diverse asset classes and periodically adjusts the portfolio. Rebalancing occurs when deviations from the original allocations arise due to disparate returns across assets. Within strategic asset allocation, target allocations depend on different factors such as the investor’s risk tolerance, investment horizon,

and objectives. Additionally, these allocations may evolve over time in response to shifting parameters. Strategic asset allocation aligns well with a buy-and-hold strategy, contrasting with tactical asset allocation, which suits a more active trading approach.

Now the adviser will explain the assumptions made to decide the correct asset allocation with a macroeconomic briefing.

4.2.1 Macroeconomic briefing

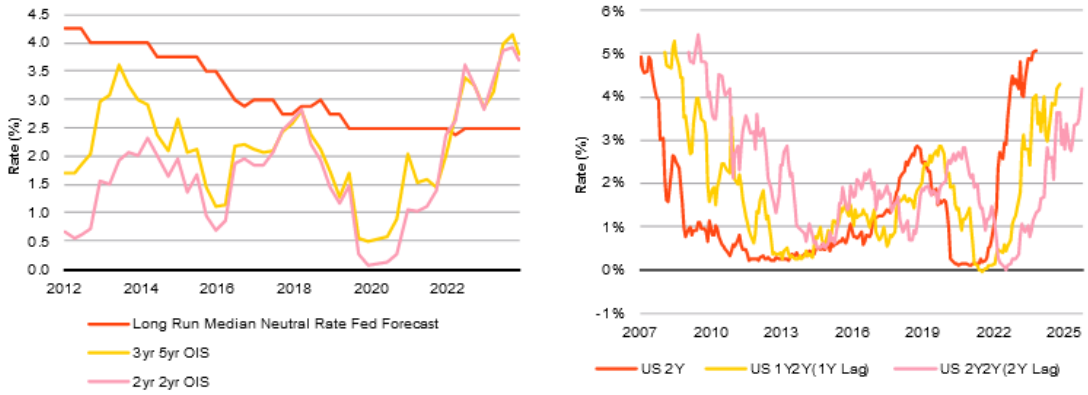
As previously said this IPS will involve the use of Value Investing, because is a suitable strategy for this time period, since we are still experiencing a situation of high interest rates and high inflation, in addition some assets will be chosen based on some market timing decisions.

It is news of these days (March 2024) that the ECB decided to keep the interest rates unchanged for the moment, while the FED already announced the same measure at the end of January and again now in March after their last meeting.

With the anticipation of economic data moderating and both the Federal Reserve and the ECB transitioning to a more balanced and accommodative policy stance in 2024, the outlook for bonds becomes particularly appealing. Historically, fixed income assets have shown robust performance following periods when the Fed paused its rate hikes, when the Fed Funds rate exceeded the rate of inflation, and when the yield curve began to de-invert. By looking at current yields against volatility levels or assessing forward market pricing, the current starting point offers a contrasting scenario to the one experienced in 2021. Moreover, forward market pricing suggests that, after a decade, rates are currently well above the Fed's median estimate of the neutral rate. This situation often indicates overly aggressive pricing at the end of a cycle, based on historical patterns.

Investors have an important chance to lock in historically high yields as the Fed reaches the end of its hiking cycle.

Figure 2: Forwards appear attractive, particularly should pricing prove too aggressive



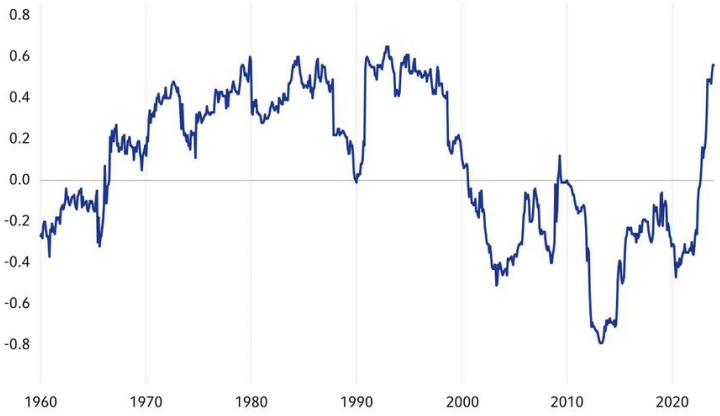
Source: Bloomberg and Federal Reserve, data as of October 31, 2023

In recent years, investors with diversified portfolios have faced significant challenges. The traditional 60% equities and 40% fixed income portfolio model, usually considered a balanced approach, experienced one of its toughest periods in 2022 and saw only a hesitant recovery in 2023. This was primarily due to the positive correlation between equity and bond returns, meaning that declines in equity markets were not offset by gains in government bonds.

The positive correlation between stocks and bonds typically occurs during unexpected inflation surges. When discount rates (Treasury yields) rise significantly without a corresponding increase in earnings expectations, both stock and bond valuations tend to decline. This scenario is more likely to happen when inflation expectations are not well anchored or when the U.S. economy experiences adverse supply shocks (like in 2021).

According to Russel Investments (2024) looking ahead, the expectation is that as supply chains heal, the Federal Reserve remains committed to targeting inflation and the potential for a recession looms, the correlation between stocks and bonds will revert to negative levels seen in the 2000s. Consequently, government bonds are expected to reclaim their role as effective diversifiers for multi-asset portfolios. This outlook suggests a potential comeback for the traditional 60/40 portfolio allocation strategy.

Figure 3: Stock-Bond correlation, 3-year rolling window



Source: LSEG DataStream, Ibbotson Associates. Monthly returns as Of October 2023. Stocks represented by the S&P 500 Index. Bonds represented by the Bloomberg Long-Term U.S. Treasury Index

Besides Equity and Bonds also Alternative Investments are part of our portfolio and this can be the perfect moment to start investing in the Real Estate sector.

As said before the raise of interest rates has stopped for the moment, and based on the predictions made by the economists later this year there will be a cut by the central banks.

Real estate investment trusts (REITs) stand to benefit from lower interest rates. Consequently, when interest rates decline, REITs often perform well, as their dividend yields become more attractive relative to other investment options. In this IPS the investment in REITs will be executed through European accumulating ETFs instruments.

Based on the research made by Cohen&Steers (2024) European listed REITs have faced challenges over the past two years, with a decline of -28% from their peak in August 2021, attributed to rising interest rates and slowing growth. However, there has been a notable rebound in European listed REITs, with a rally of more than 31% in the last two months of 2023, outpacing U.S. listed REITs. The rally in European

listed REITs is attributed to the perceived shift in the Fed's policy on interest rates, following the ECB's pause in rate hikes in October.

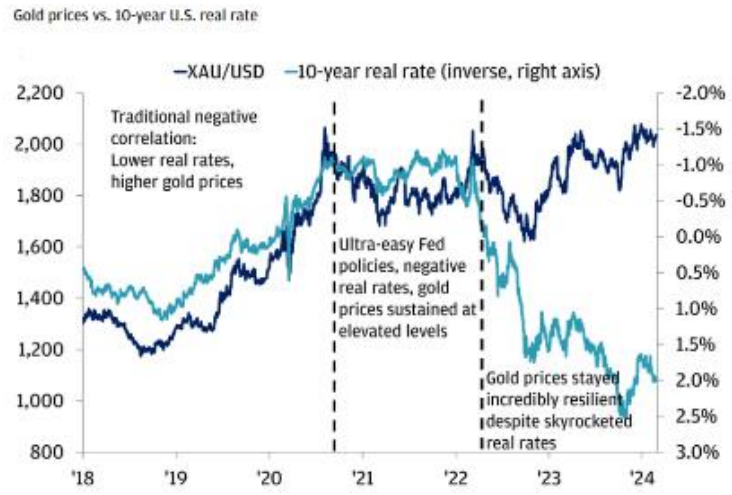
Another Alternative Investment included in this portfolio will be Gold, which based on JP Morgan (2024) will continue its price growth during these years. Here are some reasons:

1. Peaking real yields: Gold has remained resilient despite rising real yields, suggesting potential upside as yields peak and reverse.

2. Geopolitical uncertainties: Ongoing geopolitical tensions contribute to demand for safe-haven assets like gold, making it an attractive investment option.

3. Central bank demand: Record levels of gold purchases by central banks support prices and are expected to continue as they diversify reserves away from the dollar.

Figure 4: Since 2022, Gold prices stayed incredibly resilient despite much higher real yields



Source: Bloomberg Finance L.P.. Data as of February 28, 2024

4. Expected interest rate cuts: The Federal Reserve may start cutting interest rates, making non-interest-bearing assets like gold more attractive.

5. Robust retail jewellery demand: Strong demand for gold jewellery, especially in Asia, adds support to the overall gold market.

In summary, with peaking real yields, geopolitical tensions, central bank demand, strong jewellery demand, and expected interest rate cuts, the current environment favours investing in gold for diversification, hedging against inflation, and potential price appreciation.

In conclusion it could be the right period to invest in fixed income, REITs, value stocks and gold; in the next paragraph there will be an explanation regarding the selection of the specific securities and the portfolio structure.

4.2.2 Asset Allocation

Here is a description on the choice of the maximum and minimum allocation weights:

Equities: The allocation to equities spans from 22% to 48% of the portfolio, with individual equities ranging from 1% to 4% each. This allocation reflects the investor's desire for exposure to higher-risk assets with growth potential. By diversifying across different equity holdings, the portfolio tries to capture opportunities in developed markets while managing individual stock risk.

Bond ETFs: With bond ETFs comprising 45% to 65% of the portfolio, there's a substantial allocation to fixed-income securities. This allocation provides stability and income, essential for investors seeking lower-risk assets. The minimum weights safeguard a significant allocation to bonds, preserving capital and providing steady returns, while the maximum weights prevent over-reliance on fixed income, maintaining diversification.

Commodities: The allocation to commodities, represented by the gold ETF, ranges from 5% to 15%. This allocation serves as a hedge against inflation and geopolitical risks, enhancing portfolio resilience.

Reits ETF: The allocation to Real Estate, represented by the Xtrackers FTSE Developed Europe Real Estate ETF, ranges from 5% to 15% of the portfolio. Real estate investments offer diversification benefits and potential for capital appreciation.

By allocating within this range, the portfolio aims to benefit from the stability and income potential of real estate without overexposing it relative to equities.

Overall, these chosen minimum and maximum weights within each asset category ensure that the portfolio is well-diversified, with an appropriate balance between riskier and less risky assets. This approach aims to optimize returns while managing overall portfolio risk, aligning with the investor's risk tolerance and investment objectives.

4.3 Security selection

Before buying an ETF there are some considerations to make about their costs and risk: the most important cost is the Total Expense Ratio (TER), in addition, trading expenses also carry significance: this encompasses commissions (if applicable), bid/ask spreads, all of which influence the overall cost of ownership.

ETF expenses are typically expressed as the fund's total expense ratio (TER). This expense ratio represents an annual rate that the fund charges on the total assets it holds to cover securities management, administration, and other type expenses.

The commissions to pay to the brokers nowadays are less common, but if there are, is important to know that the frequency of trades directly impacts the total commission expenses.

Another cost could be the bid/ask spread: The ask represents the market price at which an investor can purchase an ETF, while the bid denotes the market price at which the same ETF can be sold. The disparity between these two prices is commonly referred to as the bid/ask spread.

The ETF selection followed the list of the following rules:

- have a total expense ratio (TER) under 0.35% while having a total AUM of at least 500 million.
- Have a minimum of 5 years since inception.
- do not exceed 50% of allocation with one single provider.

- They should accumulate and reinvest their dividends (Acc) since the client has no liquidity needs.

The selection of the securities can be seen in Figure 5 and was done considering:
(a) the set of rules presented at the beginning of this chapter.
(b) the macroeconomic briefing done in chapter 4.2.1.

There are 5 ETFs which have been selected: 2 for Bonds, 1 for Equities, 1 for the Real Estate sector and 1 for the Commodities. As said previously all the ETFs were selected trying to keep a minimum amount of €500m AUM, a maximum TER of 0.35%, a minimum of 5 years of life since the launch of the fund, and all of them being accumulating ETFs.

Regarding Bonds I followed the Value Investing strategy mentioned above and selected bonds with an actual yield exceeding the average for their rating category; this could suggest that the products may be undervalued, potentially signalling an opportunity for capital appreciation. The products were selected to diversify as much as possible, in this case one Bond ETF covers one the Euro Government Bonds market and one the European Corporate Bonds market.

For the Equities have been selected 7 stocks which are undervalued based on Benjamin Graham's principles (see Figure 5) which are: Assured Guaranty Ltd, Gerdau S.A ADR, Daqo New Energy Corp ADR, InglesMarkets, Danaos Corporation, Stellantis N.V., and ENI S.p.a. Even here diversification was considered a key factor and other stocks which respected the principles have not been selected because their specific industry were already covered.

In addition another ETF was selected for the Equities which is the iShares Edge MSCI World Value factor ETF which tracks the performance of an index composed of a sub-set of MSCI World stocks that capture undervalued stocks relative to their fundamentals.

To complete the portfolio with Alternative Investments, was selected an ETF that tracks European listed equity REITS and property companies and offers a diverse representation of the real estate market in developed countries in Europe by both geography and property type, this ETF was chosen based on Cohen&Steers' research

previously mentioned in the macroeconomic briefing and lastly an ETF which exclusively invest in Gold, based on JP Morgan analysis.

Figure 5: Security selection Data

Data updated as of 30/03/2024

STOCKS	P/E	P/B	EPS Past 5Y	Current Ratio	Debt/Equity	Dividends	Sector	Industry
Assured Guaranty Ltd (BER)	6.21	0.76	21.57%	10.16	0.41	>0	Financials	Insurance
Gerdau S.A ADR (BRA)	5.18	0.76	19.49%	2.59	0.25	>0	Basic Materials	Steel
Daqo New Energy corp ADR (CHN)	5.12	0.44	55.83%	4.2	0	>0	Technology	Solar
InglesMarkets (USA)	7.81	0.95	18.22%	3.22	0.39	>0	Consumer defensive	Grocery Stores
Danaos Corporation (GRE)	2.49	0.46	-	2.98	0.13	>0	Industrials	Marine Shipping
Stellantis (NET)	4.42	0.95	18.67%	1.24	0.36	>0	Consumer Cyclical	Auto Manufacturers
ENI (IT)	10.3	0.88	2.82%	1.3	0.64	>0	Energy	Oil&Gas Integrated

BONDS	YTM	Average YTM		TER	AUM
iShares Core € Corp Bond UCITS ETF (Acc)	3.85%	3.82%	(30/03/2024)	0.20%	2.204m
iShares VII PLC - iShares € Govt Bond 1-3yr ETF EUR (Acc)	3.20%	1.65%	(30/03/2024)	0.15%	1.407m

ETFs	TER	AUM
Ishares MSCI World Value ETF (Acc)	0.30%	3.533m

ALTERNATIVE INVESTMENTS	TER	AUM
Xtrackers FTSE Developed Europe Real Estate UCITS ETF 1C (Acc)	0.33%	696.26m
Invesco Physical Gold A (Acc)	0.12%	13.298m

Source: Author

Data for the stocks have been obtained using https://finviz.com/. In some cases were compared the ratios of the target company with those of its competitors (for example the P/E ratio), and in other cases some ratios did not follow strictly the list of principles (ENI Current ratio<1.5) because based on the other data the thought was that it could still be an undervalued opportunity.

ETFs follow the characteristics mentioned above. For Bond ETFs YTM and Average YTM are shown, the MSCI World Value ETF already includes value stocks automatically selected by their fundamentals, while the REITs ETF and the Gold ETF have been bought based on research done in the macroeconomic briefing (see chapter 4.2.1).

4.4 Portfolio Composition

4.4.1 Portfolio Theories

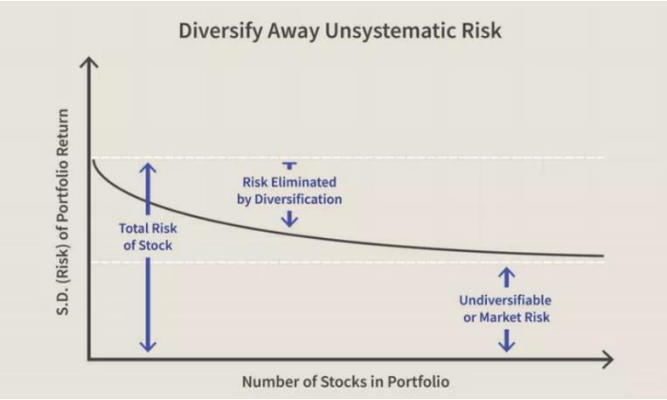
Modern Portfolio Theory (MPT), developed by Markowitz in 1952, aims to maximize expected returns for a given level of risk. According to Corporate Finance Institute (2024) key principles include diversification and risk aversion.

Diversification involves selecting a mix of assets with different risk and return profiles to mitigate unsystematic risk, which is specific to individual securities. In addition MPT assumes investors are risk-averse, preferring portfolios with higher returns for a given level of risk. Diversification can reduce unsystematic risk but does not eliminate systematic risk which is inherent to the entire market.

Portfolios can be diversified by including assets from different industries, asset classes, and markets. Holding assets that are not perfectly positively correlated helps achieve the benefits of diversification.

Mean variance theory (MVT), according to Investopedia (2021), is part of MPT and represents a simplified version of it. It considers two main components: variance, indicating the spread of returns, and expected return, the estimated return of the investment, this theory evaluates the balance between risk and return by examining the amount of risk investors are comfortable taking for various levels of return. The objective is to achieve the optimal return for a given level of risk or the minimum risk for a desired level of return.

Figure 6: Diversification and risk relationship



Source: Investopedia

4.4.2 Methodology choice

The model utilizes monthly returns, which are calculated based on the historical prices recorded on the last day of each month over the past five years (from April 01, 2019, to April 01, 2024). After computing the monthly returns, they were subsequently annualized to derive the annual returns and volatility. Additionally, a variance-

covariance matrix for the set of assets was developed. The risk-free asset chosen is the German 10-Year Government Bond, which on the 1st of April 2024 was 2.26%, the choice of this risk-free asset was made considering that the client is European and the securities are traded in Euros.

After selecting the securities that compose the portfolio, minimum and maximum weights for each security were assigned based on the investor profile and the constraints (Table 1). Subsequently with the use of the Excel Add-in Solver the final portfolio was computed, respecting the weights ranges and with the purpose to maximize the Sharpe Ratio while keeping the standard deviation under a certain value (10%).

The Sharpe Ratio measures the amount of excess return is received for each additional unit of risk that is taken on. A higher ratio indicates a better return on investment relative to the level of risk assumed.

$$Sharpe\ Ratio = \frac{R_p - R_f}{\sigma_p}$$

where:

R_p= return of portfolio

R_f= risk-free rate

σ_p=standard deviation of the portfolio's excess return

4.4.3 Portfolio Composition

Following the comprehensive assessment of the client's risk profile, investment goals, risk tolerance and time horizon the adviser must proceed with a tailored portfolio that entails the most suitable strategy.

After choosing the assets and select the minimum and maximum weights possible, the Excel Add-in Solver was used to find a portfolio that could respect all the constraints, maximize the Sharpe ratio and keep the volatility under a certain level.

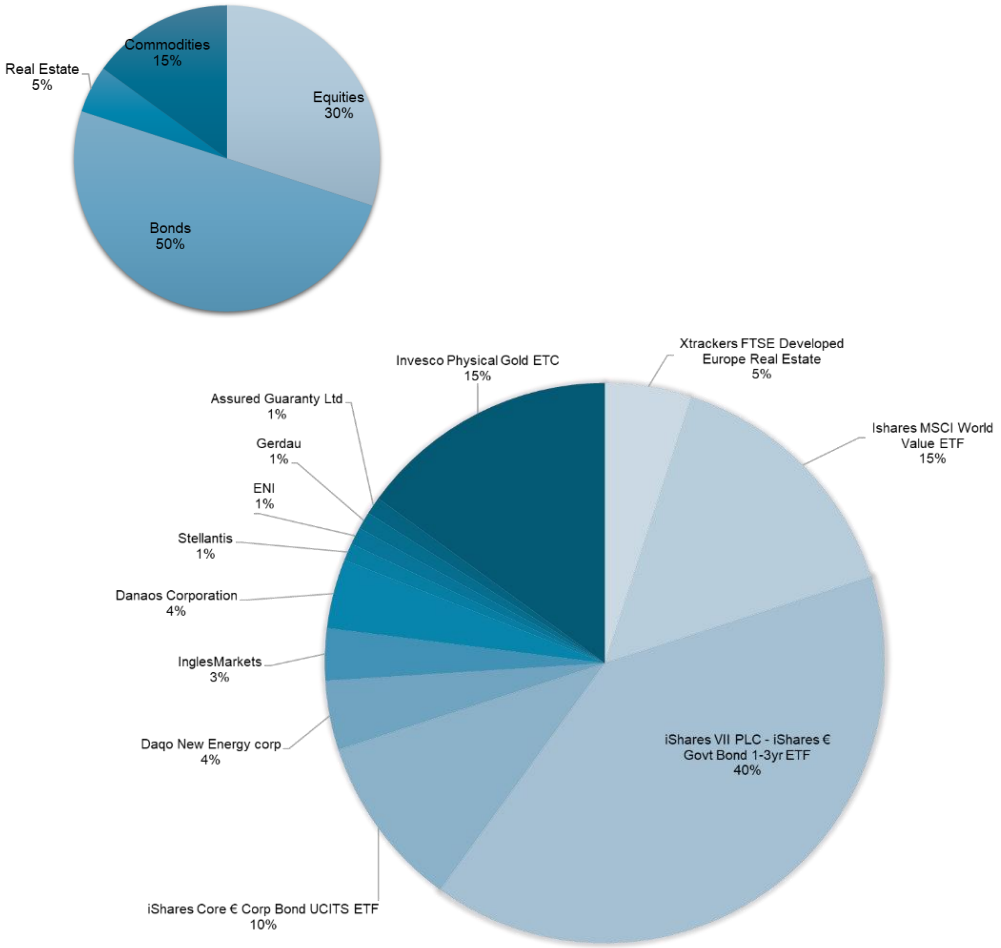
Table 1:Portfolio Composition

Assets	Min Weight	Max Weight	Weight
Xtrackers FTSE Developed Europe Real Estate	5.00%	15.00%	5.00%
Ishares MSCI World Value ETF	15.00%	20.00%	15.00%
iShares VII PLC - iShares € Govt Bond 1-3yr ETF	35.00%	45.00%	40.00%
iShares Core € Corp Bond UCITS ETF	10.00%	20.00%	10.00%
Daqo New Energy corp	1.00%	4.00%	4.00%
InglesMarkets	1.00%	4.00%	3.00%
Danaos Corporation	1.00%	4.00%	4.00%
Stellantis	1.00%	4.00%	1.00%
ENI	1.00%	4.00%	1.00%
Gerdau	1.00%	4.00%	1.00%
Assured Guaranty Ltd	1.00%	4.00%	1.00%
Invesco Physical Gold ETC	5.00%	15.00%	15.00%

Source: Author

The specific portfolio composition is provided here, this portfolio is designed to achieve a balance between income generation and capital appreciation.

Figure 7: Final Portfolio Composition



Source: Author

4.5 Expected performance

The expected annual return performance is showed in Table 2, despite there was the possibility to choose portfolios with higher expected returns and Sharpe ratio, this seemed to be the perfect choice because has a very low standard deviation which reduces the portfolio's risk and it perfectly matches the investor's profile, but not only,

it has also a much higher expected return from the one needed to achieve the financial goal.

Table 2: Portfolio Statistics

Portfolio Statistics	
Sharpe Ratio	1.098697
Expected Return	11.046%
Standard Deviation	8.00%

Source: Author

In addition a Monte Carlo simulation was developed for the annual returns over a 15-year period, assuming a Gaussian distribution with a mean of 11.046% and a standard deviation of 8%.

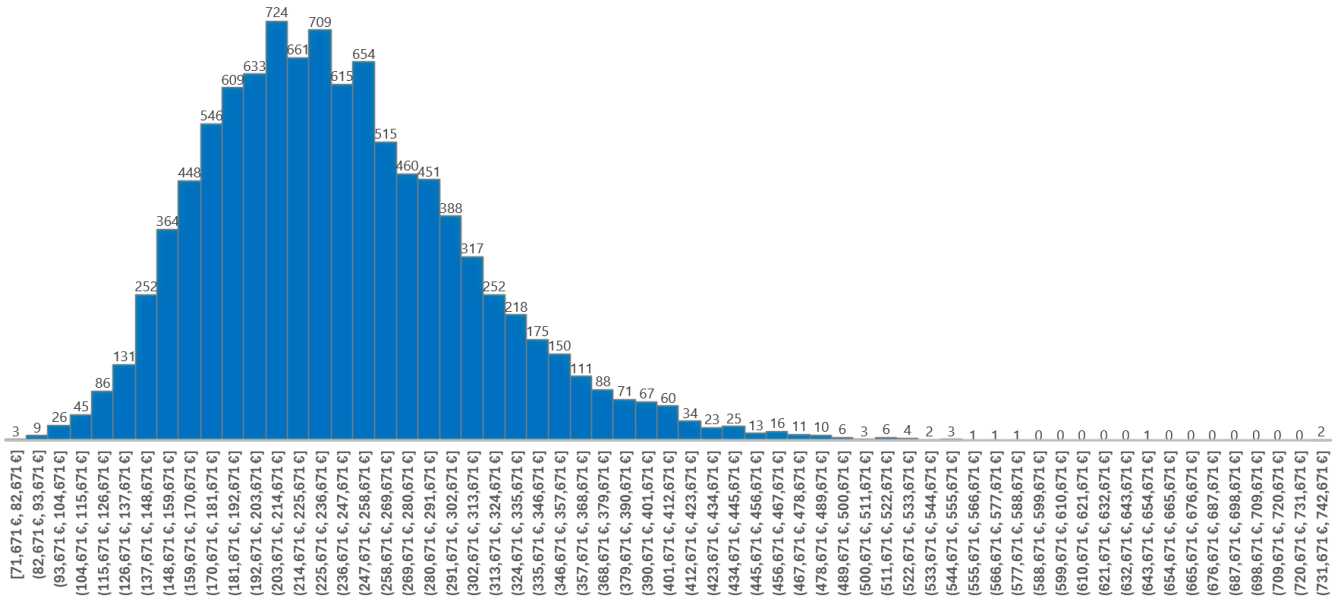
Table 3: Montecarlo Simulation Data

Percentiles	Expected outcome
5%	146,417.35 €
25%	192,372.78 €
75%	280,879.78 €
95%	362,792.67 €

Mean	240,908.26 €
Median	232,826.69 €
St Dev	67,755.46 €

Source: Author

Figure 8: Montecarlo simulation for annual returns



Source: Author

The Monte Carlo simulation indicates a high likelihood of achieving the financial goal of €129,750.7 within the 15-year period, that adjusted for inflation will overcome the €95,000 needed by the investor.

In particular there is a 95% probability that the portfolio value will exceed €146,417.35, which is well above the target.

The mean and median portfolio values (€240,908.26 and €232,826.69, respectively) suggest a strong expected performance, providing a comfortable buffer above the financial goal, and since the first one is higher than the second it suggests that the distribution of potential portfolio values is positively skewed. This means that while most of the values are around the median, there are some scenarios with significantly higher values that increase the average (outliers).

Even at the lower end (5th percentile), the projected value significantly surpasses the target, indicating a conservative scenario that still meets the investment objective.

4.6 Risk Analysis

The risk analysis involved calculating various types of VaR, including the Parametric or Variance-Covariance VaR, the Monte Carlo VaR, and the Conditional Value-at-Risk (CVaR), also known as Expected Shortfall.

4.6.1 Parametric VaR

The Parametric VaR is a statistical risk management technique that measures the maximum potential loss an investment portfolio might face within a specified time frame, given a specific level of confidence.

This analysis was conducted under the assumption that returns are Gaussian distributed, with a mean of 11.046% and a standard deviation of 8%. Table 4 compares the Parametric VaR with the Monte Carlo VaR at the end of the investment period, demonstrating that both analysis yield similar results.

Table 4: Parametric and Montecarlo VaR

Confidence Level	Z-score	Parametric Var-value	Montecarlo Var-value
99%	2.3263	36,039.63 €	36,574.12 €
95%	1.6449	25,481.96 €	25,712.62 €
90%	1.2816	19,853.71 €	19,931.53 €
75%	0.6745	10,449.15 €	10,529.03 €

Source: Author

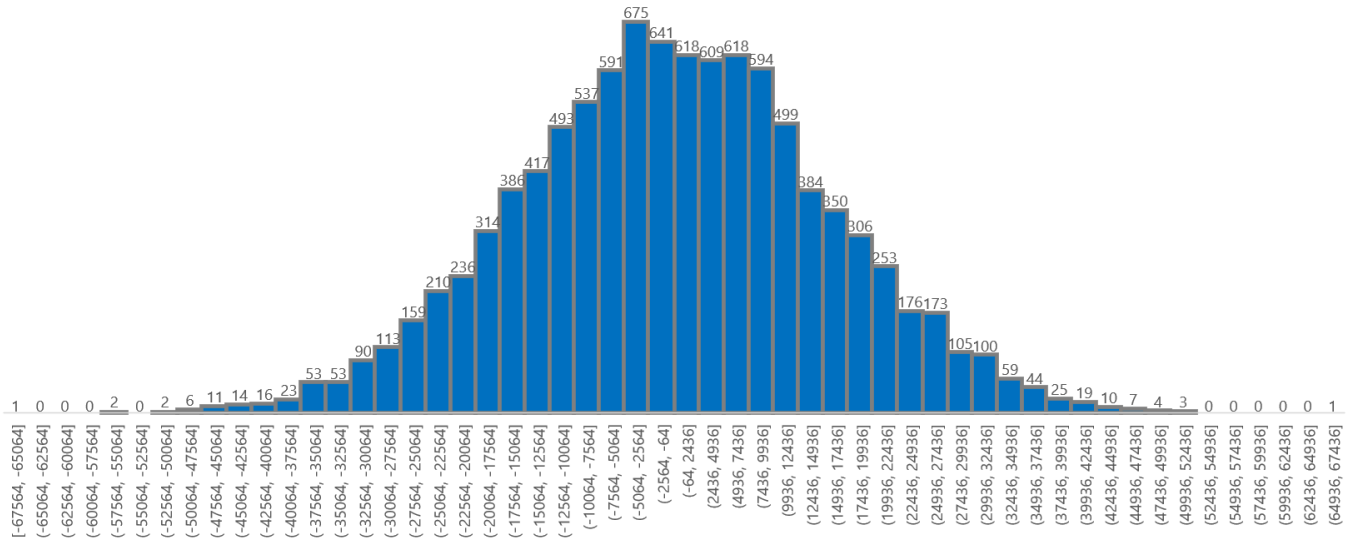
From this table, it can be seen that at a 99% confidence level there is a 99% probability that the portfolio will not lose more than €36,039.63 over the 15-year period. The remaining 1% represents the tail risk, which is the risk of extreme losses beyond the 99% confidence interval. This is the "worst-case scenario" risk that is not covered by the 99% confidence level.

4.6.2 Montecarlo VaR

A Monte Carlo simulation was performed for the annual returns over a 15-year period, assuming a normal distribution with a mean of 11.046% and a standard deviation of 8%.

Since the two methods produced similar results, at a 99% confidence level, we know that there is a 99% probability that the portfolio will not lose more than €36,574.12, as shown in Table 4.

Figure 9: Montecarlo VaR



Source: Author

4.6.3 CVaR – Conditional Value at Risk

Conditional Value at Risk (CVaR), also known as expected shortfall, is another risk measure that quantifies the average expected loss of a risky portfolio within a specified time frame and confidence level. While VaR represents the worst-case loss associated with a given probability and time horizon, CVaR measures the expected loss if that VaR breakpoint, is exceeded, as described by Chen (2024).

Table 5: Conditional value at Risk

Confidence Level	CVaR
99%	41,692.50 €
95%	32,203.38 €
90%	27,432.72 €
75%	19,887.25 €

Source: Author

This table defines the CvaR values for our portfolio: in the worst 1% of cases (99% confidence level), the average loss is expected to be €41,692.50 that is the worst-case scenario beyond the 99% VaR.

4.6.4 15 Year Horizon Risks

It is important to understand that during the investment horizon of this IPS, the portfolio could incur in many potential risks that could change trend growth or inflation, or have a lasting impact on long-term asset returns. According to JP Morgan (2024) there are plenty of risks that we should consider. The analysis will focus on those that can have a higher impact on the portfolio and will be presented in Table 6.

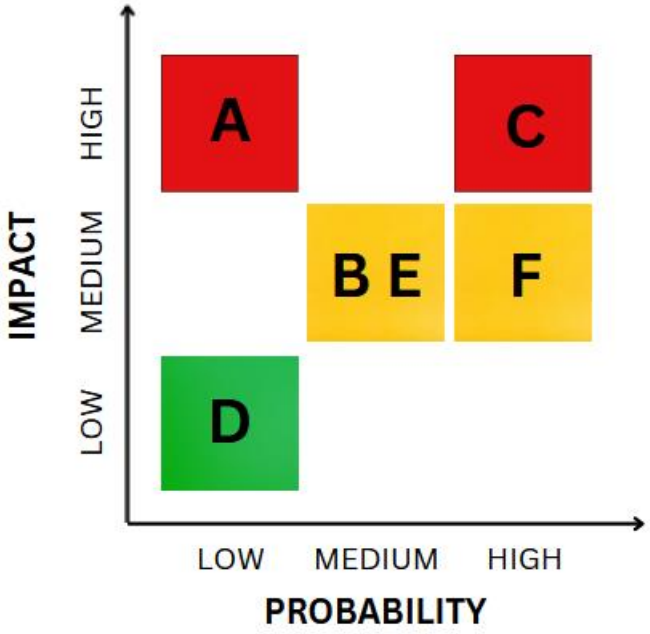
Table 6: 15 Year Horizon risks

Risks	Description	Implications
Rapid abandonment of USD as key reserve currency (A)	A challenger to the USD emerges and diverts reserve assets away from the USD. This reduces the demand for U.S. assets and shifts attention to the U.S. deficit.	Negative for growth, USD, bonds, credit and stocks; positive for real assets and commodities.
Fiscal largesse and debt sustainability concerns (B)	Increased fiscal activism combined with structural fiscal challenges from an aging population could raise concerns about debt sustainability.	It would be countered by monetary tightening, having negative impacts for bonds and stocks as fiscal austerity becomes necessary. This could also lead to currency implications if debt concerns are specific to a particular economy or region.
Accelerated adoption of artificial intelligence (C)	Enhanced productivity but possible rise of unemployment rate. Beneficial for real GDP and control over inflation.	Positive for real GDP, developed market stocks, credit, and other risk assets while mitigating some inflation risks.
Worsening climate or environmental situation (D)	Increased frequency or intensity of weather events resulting in damage to productive assets and disruptions to the supply of food and basic materials.	Short-term disruptions to supply followed by pressures on limited resources contribute to higher inflation. This dynamic favours commodities and real assets but is negative for bonds, stocks, and credit.
Embedded inflation expectations force persistently tight policy (E)	Embedded inflation expectations will lead to persistently tight monetary policy, froze growth and investment discouraged due to high interest rates and price uncertainty.	Higher bond yields and equity multiples contract. Growth stocks face pressure, and profit margins decline across various sectors. Real assets and infrastructure show resilience.
Trade tensions between U.S. and China reignited (F)	Renewed trade disputes involving tariffs and sanctions between the U.S. and China.	Increased focus on regional blocs disrupts growth and adds inflationary pressures. Commodity prices stay high, and industrial sectors face supply chain challenges. ASEAN nations and India, however, could benefit from these shifts.

Source: JP Morgan 2024 Long-Term Capital Market Assumptions: Time-Tested Projections to Build Stronger Portfolios, 28th Annual Edition, p.18

In figure 10 is presented a Risk Matrix that contains impact and probability of these 6 risks measured in different categories (‘High’, ‘Medium’, ‘Low’). The analysis is developed based on the probability for each risk to occur in the specific timeframe (15 years).

Figure 10: Risk Matrix



Source: Author

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Appendices

Appendix. 1 Client's Profile

Name	Marco Rossi
Age	35
Address	Viale Lazio, 15 Milan
Number of dependents	1
Sons' age	3 and 1 years old
Household members	4
Job	Employee of a multinational company
Household Net Annual Income	€36000 (€1600+€1400)*12
Marital Status	Married
Wife's job	Employee in a bank
Financial securities owned	None
Financial literacy	Non- expert
Investment Objective	Support his sons' education and related expenses
Time Horizon	15 years
Investment Amount	€50000
Investment Contraints	-From the start amount take risk with €25000 and the remaining €25000 for moderate investments -Invest at least 50% in ETFs - No Leverage or Short selling allowed - No investment in non-regulated financial products.
Investment goal	€95,000
Minimum rate of return	6.45%

Expected average annual return	8.30%
Additional information	Bank account savings of €10,000
Risk Profile	Moderately conservative (Questionnaire in Appendix 2)
Ability to bear risk/ Willingness to take risk	Moderate

Source: Author

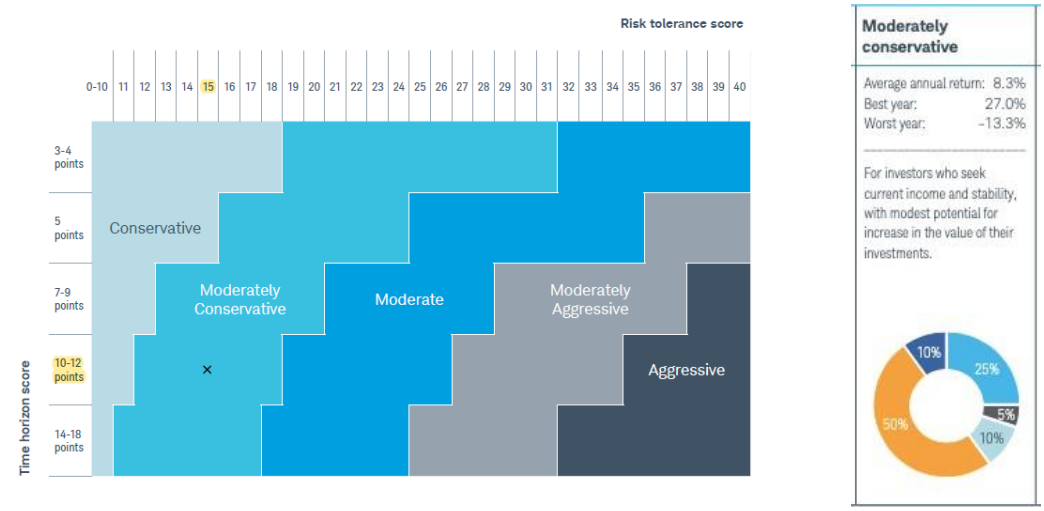
Appendix 2. Profiling Questionnaire

Time Horizon (11 points) – 1 and 2

Risk Tolerance (15 points) – 3 to 7

<table>
<tr>
<td>1. I plan to begin withdrawing money frommy investments in…
Answer: 11 years or more (10)</td>
<td>2. Once I begin withdrawing funds from my investments, I plan to spend all the funds in…
Answer: 2-5 years (1)</td>
</tr>
<tr>
<td>3. I would describe my knowledge of investments as…
Answer: Limited (3)</td>
<td>4. What amount of financial risk are you willing to take when you invest?
Answer: Take average risks expecting to earn average returns (4)</td>
</tr>
<tr>
<td>5. Select the investments you currently ownor have owned.
Answer: None (0)</td>
<td>6. Consider this information: Imagine that in the past three months, the overall stock market lost 25% of its value. An individual stock investment you own also lost 25% ofits value. What would you do?
Answer: Do nothing (5)</td>
</tr>
<tr>
<td colspan="2">7. Review the chart below: We've outlined the most likely best-case and worst-case annual returns of five hypothetical investment plans. Which range of possible outcomes is most acceptable to you? The figures are hypothetical and do not represent the performance of any particular investment.

<table>
<tr><th>Plan</th><th>Average annual return</th><th>Best-case</th><th>Worst-case</th><th>Points</th></tr>
<tr><td>A</td><td>2.6%</td><td>10.8%</td><td>-5.1%</td><td>0</td></tr>
<tr><td>B</td><td>4.1%</td><td>19.2%</td><td>-10.6%</td><td>3</td></tr>
<tr><td>C</td><td>5.6%</td><td>27.6%</td><td>-16.4%</td><td>6</td></tr>
<tr><td>D</td><td>6.1%</td><td>36.0%</td><td>-21.7%</td><td>8</td></tr>
<tr><td>E</td><td>7.2%</td><td>42.5%</td><td>-25.8%</td><td>10</td></tr>
</table>
Answer: B (3)</td>
</tr>
</table>



Source: Charles Schwab (https://www.schwab.com/resource/investment-questionnaire)

Appendix 3: ETFs and Stocks information (as per March 30th 2024)

ETF	ISIN/Symbol	Info	Holdings
iShares Edge MSCI World Value Factor UCITS ETF	IE00BP3QZB59	This accumulative ETF tracks the MSCI World Enhanced Value index, focusing on value stocks from developed countries globally. It selects stocks based on price-to-book value, price-to-forward earnings, and enterprise value-to-cash flow from operations. The ETF's TER is 0.30% p.a. and it employs a sampling technique to replicate index performance. €3.533m AUM.	The top 5 sectors: IT (22.70%), Financials (15.87%), Consumer discretionary (11.85%), Healthcare (11.37%), Industrials (11.29%). The top 5 holdings: Intel Corporation Corp (3.30%), Cisco Systems Inc. (2.72%), Toyota Motor Corp (2.18%), Qualcomm Inc (2.06%) and IBM(2.05%).
Xtrackers FTSE EPRA/NAREIT Developed Europe Real Estate UCITS ETF 1C	LU0489337690	An accumulative ETF with a 0.33% TER, which aims to replicate the FTSE EPRA/NAREIT Developed Europe index, which tracks European listed equity REITs and property companies, providing a diverse representation of the real estate market in developed European countries by geography and property type. €696.26m AUM.	The top 5 sectors: Real Estate Holding and Development (43.94%), Diversified REITs (11.95%), Retail REITs (10.28%, Industrial REITs (10.12%), Office REITs (9.56%). The top 5 holdings: Vonovia SE (10.02%), Segro REIT ORD (6.32%), Swiss Prime Site ORD (3.65%), Unibail-Rodamco-Westfield ORD (3.04%) and Land Securities Reit (3.04%).
iShares Core € Corp Bond UCITS ETF	IE00BF11F565	An accumulative ETF with a 0.20% TER which aims to mirror the Bloomberg Euro Corporate Bond index, which includes euro-denominated corporate bonds from industrial, utility, and financial issuers in Eurobond and eurozone domestic markets, all rated investment grade. €2.204 AUM.	The top 5 sectors: Banking (31.38%), Consumer Non-Cyclical (13.17%), Consumer Cyclical (9.60%),Communications (6.87%), Capital Goods (5.70%) The top 5 holdings: Banque Federative du Credit Mutuel SA (1.65%), BNP Paribas SA (1.63%), BPCE SA (1.27%), Credit Agricole SA (1.12%), Societe Generale (1.11%)
iShares € Govt Bond 1-3yr UCITS ETF EUR (Acc)	IE00B3VTMJ91	An accumulative ETF with a 0.15% TER which aims to replicate the Bloomberg Euro Government Bond 1-3 index, tracking Euro-denominated government bonds issued by EMU member states with a time to maturity between 1.25 and 3.25 years, all rated investment grade. With a TER of 0.15% p.a., it stands as the cheapest and largest ETF for this index. €1.407m AUM.	Exposure is fully on treasury Bonds of the following countries: Italy (39.07%), Germany (26.21%), France (18.19%), Spain (16.59%)
Invesco Physical Gold A	IE00B579F325	An accumulative ETF with a 0.12% TER. The Invesco Physical Gold A is the largest ETC that tracks the Gold index. The ETC replicates the performance of the underlying index with a collateralised debt obligation which is backed by physical holdings of the precious metal. €13.298m AUM.	Exposure is fully on Gold

	ISIN/Symbol	Info	Country
Assured Guaranty Ltd	BMG0585R1060	Assured Guaranty Ltd. is a holding company. Through its subsidiaries, the Company provides credit enhancement products to the United States and non-United States public finance, infrastructure and structured finance markets. Its segments include Insurance and Asset Management.	Bermuda
Gerdau S.A ADR	US3737371050	Gerdau SA is a Brazil-based manufacturer of steel products. The Company is engaged in the production and commercialization of steel products in general, through its mills located in Argentina, Brazil, Canada, Colombia, the United States, Mexico, Peru, the Dominican Republic, Uruguay and Venezuela.	Brasil
Daqo New Energy Corp ADR	US23703Q2030	Daqo New Energy Corp. is a polysilicon manufacturer. The Company utilizes the chemical vapor deposition process, or the modified Siemens process, to produce polysilicon. The Company's segments include Polysilicon and Wafer.	China
InglesMarkets	US4570301048	Ingles Markets, Incorporated is a supermarket chain in the southeast United States. It operates a total of 198 supermarkets, including 75 in North Carolina, 65 in Georgia, 35 in South Carolina, 21 in Tennessee, one in Virginia and one in Alabama. It operates 189 supermarkets under the name Ingles, and nine supermarkets under the name Sav-Mor.	USA
Danaos Corp	MHY1968P1218	Danaos Corporation is a holding company and an international owner of containerships, chartering its vessels to a range of liner companies. The Company's principal business is the acquisition and operation of vessels.	Greece

Stellantis NV	NL00150001Q9	Stellantis N.V., formerly Fiat Chrysler Automobiles N.V., is a holding Company based in the Netherlands and operates as an automaker and a mobility provider. The Company is engaged in designing, engineering, manufacturing, distributing and selling vehicles, components and production systems.	Netherlands
ENI S.p.a	IT0003132476	Eni SpA (Eni) is an Italy-based company engaged in the exploration, development and production of hydrocarbons, in the supply and marketing of gas, liquefied natural gas (LNG) and power, in the refining and marketing of petroleum products, in the production and marketing of basic petrochemicals, plastics and elastomers and in commodity trading.	Italy

Source: Author

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

- AI-based research tools were used to assist in 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.

Ludovico Guzzoni Saleri

20/06/2024