LifeGoals.

FINANCIAL SERVICES

PAN EUROPEAN PENSION PRODUCT

INTERNAL RULES / PROGRAM OF OPERATIONS

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1. Introduction

The present LifeGoals PEPP Internal Rules (the "Rules") is prepared by LifeGoals Financial Services Limited as the authorized PEPP provider of the LifeGoals PEPP (License No: __________) as this is defined herewith, and contains the various methods and arrangements used by the Company in the operation of the LifeGoals PEPP.

2. Scope

2.1. The purpose of these Rules is to set out the policies and procedures which govern the LifeGoals PEPP and is prepared in compliance with the Regulation and relevant CySEC legislation.

2.2. The Company is a licensed MiFID firm under the Cyprus Securities and Exchange Commission and its processes are therefore governed by the relevant legislation. For the purposes of this document, the Company shall act as the manufacturer and distributor of the product (unless otherwise stated in this document) and shall remain responsible for the compliance of the product with the relevant regulatory framework.

2.3. The LifeGoals PEPP is a pension product offered to EU residents under the Company's investment license of discretionary portfolio management.

3. Philosophy

3.1. The investment philosophy of the LifeGoals Funds is rooted in a passive investing approach, with an emphasis on diversification and a long-term horizon.

3.2. The investment strategy of LifeGoals acknowledges the challenges of consistently outperforming the market over the long term through active management. As such, the focus is on the construction of globally diversified portfolios that contain high quality investments. These portfolios are designed with the aim of providing satisfactory risk-adjusted returns while maintaining resilience during periods of market instability.

3.3. We recognize the significance of Environmental, Social, and Governance (ESG) factors in responsible investment management, while also maintaining a primary focus on generating robust returns. The LifeGoals ESG Investment portfolios aim to balance these two objectives: delivering value to clients and addressing crucial ESG issues, all while adhering to the highest industry standards.

4. Definitions

"Clients"	Shall mean PEPP Savers as defined in the Regulation
"Company"	Shall mean LifeGoals Financial Services Limited
"CySEC"	Shall mean Cyprus Securities and Exchange Commission
"Product and/or PEPP"	Shall mean LifeGoals PEPP
"Regulation"	Shall mean Regulation 2019/1238 for the Pan-European Personal Pension Product (PEPP)

5. Basic PEPP

The Basic PEPP is designed with a strategic investment approach that adapts to the PEPP saver's investment horizon – lifecycle investing. The risk profile for each saver evolves over time by altering the underlying investments to align with their changing needs as they progress towards retirement.

5.1.1. **Growth Phase (More than 10 years until retirement):** During this period, the Basic PEPP invests in the Growth ESG portfolio. This phase emphasizes assets with high growth potential and accepts a higher level of risk, as the long horizon allows for recovery from potential losses.

5.1.2. **Transition Phase (10 years until retirement):** As retirement approaches, the Basic PEPP shifts to the Dynamic ESG portfolio for a duration of five years. This transition aims to moderately reduce risk while still seeking significant returns.

5.1.3. **Preservation Phase (5 years until retirement):** In the final five years leading up to retirement, the Basic PEPP switches firstly to the Balanced ESG for three years and then to the Conservative ESG portfolio for the remaining two years. This phase prioritizes preserving the capital accumulated over the saver's investment horizon.

6. Alternative PEPPs

In addition to the Basic PEPP, LifeGoals offers two alternative investments that are more aggressive and which target higher returns by adopting higher risk. These options also follow a lifecycle investment strategy but use different portfolios in the accumulation, transition and preservation phases.

<u>Growth PEPP</u>

6.1.1. **Growth Phase (More than 10 years until retirement):** During this period, the Basic PEPP invests in the Aggressive ESG portfolio. This phase emphasizes assets with high growth potential and accepts a higher level of risk.

6.1.2. **Transition Phase (10 years until retirement):** As retirement approaches, the Growth PEPP shifts to the Growth ESG portfolio for years ten to six until retirement and then to the Dynamic ESG portfolio for years six to three until retirement. This transition aims to reduce risk while still seeking significant returns.

6.1.3. **Preservation Phase (3 years until retirement):** In the final three years leading up to retirement, the Growth PEPP switches firstly to the Balanced ESG for two years and then to the Conservative ESG portfolio for the remaining one year. This phase prioritizes capital preservation.

<u>Aggressive PEPP</u>

6.1.4. **Growth Phase (More than 10 years until retirement):** During this period, the Basic PEPP invests in the Equity ESG portfolio. This phase emphasizes assets with high growth potential and accepts a higher level of risk.

6.1.5. **Transition Phase (10 years until retirement):** As retirement approaches, the Aggressive PEPP shifts to the Aggressive ESG portfolio for years ten to six until retirement and then to the Growth ESG portfolio for years six to three until retirement. Then for years three to one until retirement it shifts again to the Dynamic ESG portfolio. These transitions aim to reduce risk while still seeking significant returns.

6.1.6. **Preservation Phase (1 year until retirement):** In the final year leading up to retirement, the Growth PEPP switches to the Balanced ESG portfolio to prioritize capital preservation.

7. Portfolio Construction

The following factors shall be considered when constructing new portfolios or reviewing existing Portfolios:

7.1. Asset Class and Regional Exposure

7.1.1. The asset allocation strategy implemented focuses on viewing each asset class in two complementary contexts: independently and as part of a holistic portfolio.

7.1.1.1. For the equities portion of each portfolio, the approach reflects the dynamics of the global economy in the Company's allocation. The regional allocation within the equity component is broadly informed by the global distribution of market capitalization, as represented by the MSCI All Countries World Index. This index serves as a proxy for aligning the allocation of the equity bucket with that of the global economy's.

7.1.1.2. Notwithstanding paragraph 7.1.1.1 the Company recognizes that practical application may involve thoughtful deviations from these weights. Such deviations may arise from short-term market conditions or specific regional opportunities and risks (e.g., geopolitical events like the Ukraine War). These variations are deliberate and are assessed to ensure they remain consistent with our overarching investment objectives and risk management framework.

7.1.2. A review is undertaken every month to ensure the continued relevance of the equity allocation to the evolving global economic landscape. This regular monitoring allows for necessary adjustments to be made promptly, keeping the equity bucket in step with global economic trends.

7.1.3. In the fixed income portion of the portfolio, the Company strives for globally diversified fixed Income exposures broadly informed by the Bloomberg MSCI Global Aggregate Sustainable and SRI Index. The Index serves as a proxy for aligning the allocation of the fixed income bucket with that of the global economy's. The goal is to maintain a healthy level of diversification across major regions in the fixed income allocation, whilst also respecting the target duration set for the overall fixed income bucket and ESG considerations.

7.1.4. The target duration is determined through deliberations within the investment committee, with a focus on a medium-term outlook. The impact of Central Bank intervention on each regional reference rate is significant and as such this warrants ongoing monitoring and potential recalibration of the fixed income allocation to ensure alignment with the prevailing market conditions and our strategic objectives.

7.1.5. A review is undertaken every month, to ensure the fixed income bucket remains relevant to the global economic landscape and in step with global economic trends.

7.2. Assignment of weights

Looking at each portfolio holistically, the weights assigned to different asset classes depend on the Portfolio's specific risk profile. The allocation of these weights aims to balance the risk and return expectations of each Portfolio, drawing on analysis of each asset class and our understanding of their interactions within the broader portfolio. This approach ensures that the overall portfolio composition aligns with the risk and return objectives of the Portfolio, enabling us to provide products that cater to the needs and expectations of our clients. There are four asset classes:

(i) Cash & Cash Equivalents
(ii) Fixed Income
(iii) Equities
(iv) Alternative Investments

7.3. ETF Selection

7.3.1. To implement the asset allocation and regional exposures outlined above, the Company utilizes ETFs that each focus on a single asset class and/or region. This approach allows for the efficient capture of each segment of the relevant market.

7.3.2. The ETF selection process is divided into two main stages:

Stage 1: Identification of the eligible universe of ETFs, and

Stage 2: Selection of ETFs from this universe that most accurately reflect the characteristics of their respective markets.

7.3.3. Through this two-stage process, it is ensured that the ETFs selected for the Company's portfolios are not only compliant, reputable, and cost-effective, but also accurately reflect the characteristics of their respective markets.

7.3.4. Comparison files are maintained by the Portfolio Manager.

7.4. Stage 1: Identifying the Eligible Universe

7.4.1. To identify the eligible universe of ETFs, an extensive research on the universe of ETFs available in the global market shall be conducted. This research is guided by five key considerations:

7.4.1.1. **Regulatory Compliance**: The ETFs must be compliant with regulations and eligible for sale in the jurisdictions the Company is permitted operate. Currently, the Company may offer services in all EU member states.

7.4.1.2. **Provider Reputation**: ETFs that are issued by reputable providers are favored.

7.4.1.3. **ESG Alignment**: The ETFs must align with the Company's ESG exclusion policy.

7.4.1.4. **Liquidity and Size**: Large, liquid ETFs are preferred as they potentially safeguard efficient trade execution and potentially lower transaction costs.

7.4.1.5. **Cost Competitiveness**: The ETFs must offer competitive costs, particularly in terms of their Total Expense Ratio (TER).

7.4.2. To facilitate this research, the Portfolio Manager utilizes LSEG's Fund Screening (FSCREEN) platform. The primary filtering is done using the following criteria:

7.4.2.1. Asset = Active

7.4.2.2. Exchange Traded Fund (ETF) = Yes

7.4.2.3. UCITS = Yes

7.4.2.4. Article 8 or Article 9 classification

7.4.2.5. TER =< 0.5%

7.4.2.6. AUM of share class >=100m EUR

7.4.2.7. Has been in existence for over 5 years (may consider 3 years depending on market offering)

7.4.2.8. Valuation/Pricing Frequency = Daily

7.4.3. The above criteria must be adhered to at all times with the exception of 7.4.2.6 and 7.4.2.7 due to the specific criterion being subject to market availability.

7.4.4. Incorporating ESG Principles in the Investment Process:

7.4.4.1. A critical component of the Company's investment strategy is the integration of Environmental, Social, and Governance (ESG) principles. These principles are central to the Company's investment decision-making process, ensuring the portfolios align with responsible and sustainable investment practices. This is accomplished with the following actions:

7.4.4.1.1. Sustainable Finance Disclosure Regulation (SFDR) Compliance:

7.4.4.1.1.1. Investments that adhere to Article 8 or Article 9 of the EU Sustainable Finance Disclosure Regulation ("SFDR") are prioritized. As per the SFDR, investments that either promote environmental or social characteristics or demonstrate a commitment to sustainable investment as their objective are preferred where available.

7.4.4.1.2. Exclusion Criteria:

In line with the Company's commitment to sustainability and responsibility, the Company's internal policy excludes certain investments from consideration. The exclusion criteria apply to companies involved in the following activities:

7.4.4.1.2.1. Controversial Weapons
7.4.4.1.2.2. Nuclear Weapons
7.4.4.1.2.3. Civilian Firearms
7.4.4.1.2.4. Conventional Weapons
7.4.4.1.2.5. Tobacco
7.4.4.1.2.6. Thermal Coal
7.4.4.1.2.7. Violations of UN Global Compact principles

7.4.4.2. ESG Scoring:

To assess the sustainability performance of potential investments, the Company uses LSEG and/or MSCI ESG Scoring. These scores are calculated by each 3rd party by examining various factors of the instruments and are integral to the Company's decision-making process, providing a quantifiable measure of an investment's sustainability performance.

7.4.4.2.1. In the context of global investing, it is essential to recognize the varying ESG performance across different markets and sectors. The geographical and economic realities of emerging markets often result in a lower overall ESG score compared to their developed counterparts. This discrepancy is due to factors such as different levels of regulatory oversight, variable enforcement of ESG standards, and disparate levels of transparency in ESG reporting.

7.4.4.2.2. The Company ensures that all ETFs included in the portfolio meet minimum ESG standards, with scores of no less than 60 (LSEG) or a rating of at least B (MSCI) depending on data availability. Beyond these minimum thresholds, the target portfolio ESG score is set to approximately 70, reflecting a level considered satisfactory within LSEG's grading scale. This approach balances the aim of maintaining strong ESG performance with recognition of variations across regions and sectors.

7.4.4.2.3. By setting a realistic ESG scoring target, the Company ensures that its investment strategy remains inclusive and diversified across regions and sectors, while still maintaining a strong commitment to ESG principles. This in turn allows the Company to balance its pursuit of ESG quality with the practicalities of global investing, ensuring the viability and sustainability of its portfolios.

<u>LSEG ESG Scoring Scale</u>

Score Range	Grade	Description
0.0 <= score <= 0.083333	D-	'D' score indicates poor relative ESG performance and insufficient degree of transparency in reporting material ESG data publicly.
0.083333 < score <= 0.166666	D	
0.166666 < score <= 0.250000	D+	
0.250000 < score <= 0.333333	C-	'C' score indicates satisfactory relative ESG performance and moderate degree of transparency in reporting material ESG data publicly.
0.333333 < score <= 0.416666	C	
0.416666 < score <= 0.500000	C+	
0.500000 < score <= 0.583333	B-	'B' score indicates good relative ESG performance and above-average degree of transparency in reporting material ESG data publicly.
0.583333 < score <= 0.666666	B	
0.666666 < score <= 0.750000	B+	
0.750000 < score <= 0.833333	A-	'A' score indicates excellent relative ESG performance and high degree of transparency in reporting material ESG data publicly.
0.833333 < score <= 0.916666	A	
0.916666 < score <= 1	A+	

<u>MSCI ESG Rating Scale</u>

Grade	Description
AAA	Leader: A company leading its industry in managing the most significant ESG risks and opportunities
AA	
A	Average: A company with mixed or unexceptional track record of managing the most significant ESG risks and opportunities relative to industry peers
BBB	
BB	
B	Laggard: A company lagging its industry based on its high exposure and failure to manage significant ESG risks.
CCC	

7.4.4.3. On voting and engagement with the underlying issuers regarding ESG issues, the Company does not directly engage with companies or actively participate in voting. Instead, it capitalizes on the ESG policies of the underlying ETF providers.

7.5. Stage 2: Selecting the best in class ETFs

Once the eligible universe has been identified, all the ETFs are assessed by region and specific portfolio fundamentals are further screened to identify the best in class ETFs. A non-exhaustive list of factors assessed are as follows:

7.5.1. **Historical Performance**: The ETF's historical performance is compared against its respective regional benchmark.

7.5.2. **Volatility**: The ETF's volatility is assessed in comparison to its respective regional benchmark.

7.5.3. **Allocation**: The ETF's sectoral, geographical, and currency allocation against the benchmark is evaluated.

7.5.4. **Coverage**: The ETF's coverage of individual securities within its respective market is assessed.

7.5.5. **Risk-Adjusted Returns**: Key risk-return metrics such Beta and Sharpe ratio are considered.

7.5.6. **Cost Efficiency**: In the ETF selection process, the cost-effectiveness of each ETF primarily through the Total Expense Ratio (TER) is assessed.

7.6. Post assessment procedure

7.6.1. Upon completion of the aforementioned process, the Portfolio Manager shall prepare a Report which will be presented to the Investment Committee during its for approval.

7.6.2. Following approval by the Investment Committee, the Report shall be presented to the Board of Directors for final approval. Once approved, the Company may start offering the Portfolio to its clients.

7.7. Asset Allocation

The Asset Allocation is included in **ANNEX II** of these Rules.

7.7.1. Review of asset allocation

7.7.1.1. A review is undertaken during every Investment Committee meeting to ensure the continued relevance of the allocation to the evolving global economic landscape. This regular monitoring allows for necessary adjustments to be made promptly.

7.7.2. Monitoring

7.7.2.1. The ongoing competitiveness and relevance of the portfolios are maintained by regularly monitoring the performance of the selected underlying ETFs. This monitoring process involves comparing the chosen ETFs with other top performers in the market and their corresponding benchmarks. The Portfolio Manager examines the same fundamentals and criteria that were used during the selection process.

7.7.2.2. To identify potential underperformance, the Portfolio Management has adopted a rolling 6-month review period. This timeframe strikes a balance by being sufficiently long to account for normal market fluctuations, yet short enough to ensure persistent underperformance does not go unnoticed.

7.7.2.3. Underperformance is calculated on a relative basis:

7.7.2.3.1. If a selected ETF's returns are 10% lower than those of a comparable ETF over this review period, it's flagged for further review. For example, if a comparative fund achieves a return of 15% and our selected ETF returns 13.5%, this represents a relative underperformance of 10%. If this is the case, then the ETF is flagged for further review.

7.7.2.3.2. For 6-month performance below 10%, the threshold changes to 1% underperformance (i.e. 9% vs 8%).

7.7.2.4. Depending on the outcome of this review, the Company may reassess its suitability within the portfolio. If necessary, a search for a replacement that better aligns with our investment objectives is initiated.

7.7.2.5. When an ETF is flagged for review during an Investment Committee (“IC”) meeting, the subsequent review process is conducted in the subsequent IC.

7.7.3. Record keeping of reviews

7.7.3.1. Whenever a review is initiated, the relevant information is logged into the designated log. This ensures that each instance of the monitoring and review process is accurately recorded, allowing for easy reference and tracking of the selected ETF's performance, comparative benchmarks, relative underperformance, and the outcomes of the review. The Portfolio Manager is responsible for maintaining up to date logs. As a control measure, the Compliance officer shall periodically, and at least annually review the actions taken by the Portfolio Manager. The Internal Auditor shall review the process on an annual basis.

7.7.4. Rebalancing

7.7.4.1. The Company utilizes the Lifegoals Financial Technologies Manager (LFTM) for all operations, including the rebalancing process. A robust automated system is in place for maintaining optimal asset allocation in all portfolios, reviewing all accounts on a weekly basis.

7.7.4.2. The platform ensures that the asset allocations within each portfolio remain in line with the strategy's defined parameters. In the event of market movements that cause a deviation from the target allocation, the system automatically rebalances the portfolio to bring it back into alignment.

7.7.4.3. This automated process provides a consistent and disciplined approach to maintaining the strategic asset allocation of the portfolios, helping to mitigate risk, potentially enhance returns over the long term and reduces the possibility of human error.

7.7.5. Investment Committee

7.7.5.1. The Investment Committee (IC) is instrumental in overseeing the implementation of the investment policy and monitoring the provision of investment services to clients. The Portfolio Management team presents proposals regarding investment policy and strategy to the committee, which then critically reviews and decides to approve or reject these proposals. The requirement for committee meetings is a quorum, achieved with a minimum of three members either physically present or participating online. The Investment Committee plays a pivotal role in maintaining the integrity and high standards of our investment process and practices.

7.7.5.2. Pertaining to Asset Management, the responsibilities of the Investment Committee are as follows:

7.7.5.2.1. to supervise the proper choice of investments (framework for investment decisions);

7.7.5.2.2. information analysis for adequate briefing prior to decision-making;

7.7.5.2.3. to analyse the investment potential and contribute to the elaboration of the investment policy;

7.7.5.2.4. to determine the Company's pricing policy;

7.7.5.2.5. to decide upon the markets and types of Financial Instruments in which the Company shall be active;

7.7.5.2.6. to establish, approve, monitor, adjust and monitor the Company Investment Policy in relation to the Portfolio Management Department and the Investment Advice Department by using the recommendations of the Heads of the relevant Departments through the Investment Reports, as applicable;

7.7.5.2.7. to review the Company Investment Policy whenever a material change occurs;

7.7.5.2.8. to analyse the economic conditions and the investment alternatives based on a thorough examination of third-party reports;

7.7.5.2.9. to select appropriate benchmarks for different type of portfolios, where applicable;

7.7.5.2.10. to examine the returns and the associated risks of the Client portfolios, as applicable.

7.7.5.3. The Investment Committee convenes at least quarterly (in practice it meets on a monthly basis), with meetings taking place either in the company's offices or online. In these meetings, the Committee receives reports from Asset Management, Risk Management and a 3rd party research analyst. The reports focus on reassessing and rebalancing the company's investment strategy and on providing insights into market conditions.

7.7.5.4. The Investment Committee's decisions pertain to broad strategic choices related to investments that align with the risk profile categories of our clients or the company. These decisions may encompass various sectors of the economy across multiple regions and countries, general macroeconomic indicators, types of financial instruments, financial markets, and market segments. These strategic decisions are communicated to the relevant department heads within the company, facilitating their effective performance of their roles. When related to specific investment strategies, these decisions contain prescribed content.

7.7.5.5. Investment Committee decisions are determined by majority vote, with meeting minutes recorded and filed by the IC Secretary after they have been approved by the IC Chairman. In the event of a tied vote, the group that the IC Chairman voted with is considered the majority. The department heads present actions taken towards implementing the Committee's previous decisions, relative to their departments of responsibility. The minutes of the Committee meetings, along with a report on actions taken, are presented to the Board during one of its regular meetings.

8. Risk management

8.1. The LifeGoals PEPP is developed on sound risk-mitigation techniques, as shown in ANNEX III, which are applied to ensure that the PEPP Saver recoups its capital at retirement and that it is provided with stable and adequate individual retirement income and fair treatment.

8.2. To that objective, the risk management function monitors in a continuous basis the portfolios risk exposures and ascertains that the exposures are authorized and consistent with the risk targets and objectives set and do not breach any risk tolerance limits. The risk management function ensures that all the LifeGoals portfolios offered to PEPP savers (i.e., Basic or alternative investment options) are neutralized regarding idiosyncratic risk factors removing biases and undesirable bets while underlying investments are selected after careful consideration of performance measurements that are risk adjusted such as, return attribution, Sharpe and Information ratio.

8.3. In addition to neutralization, under the Basic PEPP and alternative investment options, the strategic allocation of the PEPP Saver portfolio is gradually adapted in time, to reduce exposure on market risks such as, equity risk, interest rate risk and commodity risk. That is to say, the investment risk is lowered as the PEPP Saver approaches retirement to minimize deviations on capital accumulated at that time. None of the portfolios offer guarantee on the capital invested. The risk management function also makes certain that underlying investments that are not consistent with risk targets and objectives that are screened out from further consideration.

8.4. Furthermore, performance attribution and risk measurement analytical tools are developed to better comprehend returns and risk in individual portfolios as well as their source. One of the analytical tools used is the EIOPA'S stochastic model for the assessment of the risk profile and potential performance of each investment option. The risk management function makes sure though this model that the risk mitigation techniques of each investment option offered are designed to ensure compliance with the requirements set in the Article 14 of the Delegated Regulation (EU) 2021/473. The investment options offered are tested on a bi-annual basis that are in-line with the regulations risk profile and performance once the model is recalibrated. During the model recalibration, an evaluation of its conceptual soundness and quality is performed, which involves analysing all the documentation and live test results that backup the construction of the model. In the case where an investment option offered is no longer in compliance with the requirements it is immediately dropped from the offering, or its risk mitigation techniques are enhanced in order to the requirements. For example, the investment option's allocation or composition is changed by the portfolio management function.

8.5. To effectively managing risks, the risk management function utilizes systematic and rigorous techniques as to how risks are identified and dealt with, by promoting risk awareness, best practices, and an independent reporting line to the management to ensure proper segregation of duties. Key risk indicators are used to monitor trends in risk exposures and promptly alarm for unusual events before they become significant problems. Transactions generated systematically are validated that are consistent with client expectations and that there are not deviations due to unauthorized activity or system failure. Furthermore, controls in the system infrastructure ensure that transactions with similar order instruction are aggregated to maximize efficiency and provide fair treatment to all PEPP savers irrespective of generation.

8.6. Overall, the LifeGoals PEPP risk management process is developed to ensure strict adherence and consistency to the targets and objectives set, considering both the risks that may occur due to investment activities and the risks that may occur from the operational processes of those investment activities.

9. Administration

9.1. Account Opening

The Client shall be required to go through an account opening process prior to the conclusion of the PEPP contract. The purpose of this process is to obtain information from the prospective client in relation to their retirement-related demands and needs.

9.1.1. Creation of account

9.1.1.1. The client is able to initiate the account opening process for the LifeGoals PEPP electronically through the LifeGoals website https://www.lifegoals.eu or the LifeGoals mobile application. The following information has to be provided by the Client during account opening:

a) Name & Surname
b) DoB
c) Country of residence
d) Tax Identification Number

9.1.1.2. The client is required to answer the existing LifeGoals questionnaire, which includes AML/KYC questions as well as suitability assessment questions.

9.1.1.3. Following completion of the questionnaire, the client must also go through the Onfido process to verify their identity or passport.

9.1.2. Choosing Investment options

9.1.2.1. Once the process described above is completed, the client will, **by default**, be provided the Basic PEPP. The Basic PEPP is the default option offered to all clients. The PEPP Alternative Investment options are made available only to those clients who satisfy the MiFID suitability and appropriateness test, currently used by the Company. The test takes into consideration the client's knowledge and experience in the investment field relevant to the PEPP offered or demanded and their financial situation including their ability to bear losses, and their investment objectives including their risk tolerance. Those clients eligible for the Alternative options may switch to the recommended option at any time via their online account.

9.1.2.2. Upon completing the questionnaire, the client will be provided with suitable Alternative options in electronic form available to their online account.

9.1.2.3. Prior to choosing an investment option, the Company shall provide the client with the following documents (via the platform):

a) Basic PEPP KID;
b) The relevant KID of an Alternative investment option (where applicable);
c) ESG pre-contractual information (Basic and Alternative where applicable).

9.1.2.4. The Company shall provide advice to the client prior to the conclusion of the PEPP contract providing the client with a personalised recommendation explaining why a particular PEPP, including a particular investment option, if applicable, would best meet the client's demands and needs.

9.1.2.5. The Company shall also provide the client with personalised pension benefit projections for the recommended product based on the earliest date on which the decumulation phase may start and a disclaimer that those projections may differ from the final value of the PEPP benefits received. If the pension benefit projections are based on economic scenarios, that information shall also include a best estimate scenario and an unfavourable scenario, taking into consideration the specific nature of the PEPP contract.

9.1.2.6. If the Basic PEPP is offered without at least a guarantee on the capital, the Company shall clearly explain the existence of PEPPs with a guarantee on the capital, the reasons for recommending a Basic PEPP based on a risk mitigation technique consistent with the objective to allow the client to recoup the capital and clearly demonstrate any additional risks that such PEPPs might entail in comparison to a capital guarantee based Basic PEPP providing a guarantee on the capital. This explanation shall be done in written format.

9.2. Methods used to generate/store/monitor contracts.

When the client completes the online process described above, the platform generates the PEPP contract. A notification is automatically sent to the verified registered email of the client to login into the platform and sign the PEPP contract.
Once e-signed, the PEPP contract is then automatically saved on the client's online account and is made available to the client immediately via the platform.

9.3. Safekeeping of PEPP client assets

9.3.1. The Company holds the license of safekeeping and administration of client funds. Therefore, the Safekeeping of Assets Policy shall apply to the funds of the PEPP clients in accordance with the relevant CySEC Directive DI87-01.

9.3.2. All PEPP client funds are securely held in segregated accounts, separate from the Company's own funds and off the balance sheet, within the Company's designated Client account. Specifically, all investments within the PEPP product are entrusted to the custody of Saxo Bank A/S. This ensures the safety of PEPP client funds, even in the highly improbable event of the Company undergoing liquidation.

9.4. Switching

9.4.1. Switching – Transferring

9.4.1.1. The client may use the switching service which is provided on their personal account. Prior to providing the service, the Company shall provide the following information to the client in electronic form in their personal account:

9.4.1.1.1. the roles of the transferring and receiving PEPP provider for each step of the switching process;

9.4.1.1.2. the time-frame for completion of the respective steps;

9.4.1.1.3. the fees and charges charged for the switching process;

9.4.1.1.4. the possible implications of the switching, in particular on the capital protection or guarantee, and other information related to the switching service;

9.4.1.1.5. information about the possibility for a transfer of assets-in-kind, if applicable.

9.4.1.2. An electronic request form will be made available, and the client shall complete it and electronically sign it. The Company may act either as the Receiving provider or the transferring provider. The below shall constitute the process for each situation.

9.4.2. Switching – Transferring (out)

9.4.2.1. Where the Company acts as the **Transferring provider**, the following shall apply:

9.4.2.1.1. The Client must complete and electronically sign a "Switching Request Form (Transferring)" (ANNEX I) (Form) available online in their respective account. The Form shall be kept electronically in the client's account.

9.4.2.1.2. Client must provide the Company with a written consent for the performance of the tasks listed below;

9.4.2.1.3. Specify the date from which payments are to be executed to the PEPP account opened with the receiving provider. The date shall be at least two weeks after the date on which the receiving PEPP provider receives the documents transferred from the Company.

9.4.2.2. Furthermore, the Company must receive from the Receiving PEPP provider a request to carry out the following tasks:

9.4.2.2.1. To provide the Receiving Provider with the PEPP Benefit Statement for the period from the date of the last drawn up PEPP Benefit Statement to the date of the request to the Client and to the receiving PEPP provider;

9.4.2.2.2. To stop accepting incoming payments on the PEPP account with effect from the date specified by the Client in the request referred to above;

9.4.2.2.3. To transfer the corresponding amounts, or where applicable, assets-in-kind from the PEPP account to the new PEPP account opened with the receiving PEPP provider on the date specified by the Client in the request;

9.4.2.2.4. To close the PEPP account on the date specified by the Client if the Client has no outstanding obligations. The Company will immediately inform the Client where such outstanding obligations prevent the Client's account from being closed. A notification shall be automatically sent to the verified email of the client and shall be in the form as presented in ANNEX I.

9.4.3. Switching – Receiving

9.4.3.1. A prospective client may choose the Company to be the Receiving PEPP Provider. In such cases, the following shall apply:

9.4.3.1.1. A prospective Client must sign up and create a PEPP account with the Company.

9.4.3.1.2. The Company, prior to providing the switching service, shall make available to the Client the information described above.

9.4.3.1.3. Upon completion of the onboarding, a "Switching Request Form (Receiving)" (ANNEX I) shall be made available online and the client must complete and electronically sign the Form which shall then be stored in the client's online account.

9.4.3.1.4. Upon signing the Form, the Company must request the following from the Transferring Provider within five (5) business days (Annex I):

9.4.3.1.4.1. To send the PEPP Benefit Statement for the period from the date of the last drawn up PEPP Benefit Statement to the date of the request to the Client and to the Company;

9.4.3.1.4.2. To stop accepting incoming payments on the PEPP account with effect from the date specified by the Client in the request referred to above;

9.4.3.1.4.3. Request from the transfer the corresponding amounts, or where applicable, assets-in-kind from the PEPP account to the new PEPP account opened with the Company on the date specified by the Client in the request;

9.4.3.1.4.4. close the PEPP account on the date specified by the Client if the Client has no outstanding obligations. The Company will immediately inform the Client where such outstanding obligations prevent the Client's account from being closed. A notification shall be automatically sent to the verified email of the client and shall be in the form as presented in ANNEX I.

9.5. Portability and Sub accounts

9.5.1. Portability involves the PEPP saver changing residence to another Member State without changing PEPP providers, whereas the switching of PEPP providers does not necessarily involve a change of residence.

9.5.2. Where the Client does not wish to switch providers, the Company may open sub accounts in other Member States by notifying the CySEC. The notification must include the following information:

9.5.2.1. Standard contract terms of the PEPP contract, including the annex for the new sub-account;

9.5.2.2. the PEPP KID, containing the specific requirements for the sub-account corresponding to the new sub-account;

9.5.2.3. the PEPP Benefit Statement, the PEPP Benefit Statement, in accordance with the Template in Annex II of the Regulation (EU) 2021/473;

9.5.2.4. information about contractual arrangements with a partner established in the host member state, where applicable.

9.5.3. The CySEC shall transmit the complete information to the competent authority of the host Member State within 10 working days from receipt.

9.5.4. The CA of the host Member State must acknowledge receipt and reply within 10 working days and CySEC must inform the Company that the CA of the Host MS have received the required documents. If no comments are received, then the Company may start providing the PEPP to the host Member State. In the absence of acknowledgment of receipt within 10 working days of the date of the transmission of the information, the CySEC shall inform the Company that the Company can start providing services in that host Member State.

9.5.5. In the event of a change in any of the information and documents referred to above, the Company shall notify that change to CySEC at least one month before implementing the change. The competent authorities of the home Member State shall inform the competent authorities of the host Member State about the change as soon as possible and no later than one month from receipt of the notification.

9.5.6. The Company shall ensure that when a new sub-account is opened within a PEPP account, it shall correspond to the legal requirements and conditions determined at national level for the PEPP by the new Member State of residence of the PEPP saver. All transactions in the PEPP account shall be entered into a corresponding sub-account. The contributions made to and withdrawals from the sub-account may be subject to separate contract terms.

9.5.7. If a Client wants to make use of the portability service they must follow the process below:

9.5.7.1. The Client must inform the Company of their intention to change residence to another Member State via email.

9.5.7.2. Upon receipt of the email, the Company shall inform the Client about the possibility of opening a new sub-account within the Client's PEPP account and about the timeframe within which such a sub-account could be opened.

9.5.7.3. The Company shall provide the Client free of charge with the PEPP KID, for the sub-account corresponding to the new Member State of residence of the Client.

9.5.7.4. In the event that a new sub-account is not available, the Company shall inform the Client about the right to either switch, without delay and free of charge, to a PEPP Provider which provides a sub-account for that Member State and/or to continue saving in the last sub-account opened.

9.5.7.5. If the Client intends to make use of the possibility to open a sub-account, the Client shall inform the Company of the following:

9.5.7.5.1. the Client's new Member State of residence;

9.5.7.5.2. the date from which the contributions shall be directed to the new sub-account;

9.5.7.5.3. any relevant information about other conditions for the PEPP.

9.5.7.6. The Client may continue contributing to the last sub-account opened.

9.5.7.7. The Company shall offer to provide the Client with a personalized recommendation explaining whether the opening of a new sub-account within the Client's PEPP account and making contributions to the new sub-account would be more favorable than continuing to contribute to the last sub-account opened.

9.5.7.8. Where the Company is not able to ensure the opening of a new sub-account corresponding to the Client's new Member State of residence, the Client shall according to his or her choice be able to:

9.5.7.8.1. switch PEPP provider without delay and free of charge notwithstanding the requirements the frequency of switching; or

9.5.7.8.2. continue contributing to the last sub-account opened.

9.5.7.9. The new sub-account shall be opened by amending the existing PEPP contract between the Client and the Company, in compliance with the applicable contract law. The date of opening shall be defined in the contract.

9.5.7.10. The Client must, upon changing residence, provide the Company with a "Proof of Address" document. This can be a recent utility bill (no mobile phone utility bill is accepted), or a document from a local authority (i.e. tax, social insurance or equivalent to the country of residence), issued in the past 6 months. The Client may provide the said document no later than a month following change of residence.

10. Product oversight and governance arrangements

10.1. In accordance with Paragraphs 23(1)(b) and 25 of the Regulation, the Company shall maintain, operate and review a process for the approval of each PEPP, or significant adaptations of an existing PEPP, before it is distributed to PEPP customers.

10.2. The Company is a licensed MiFID firm and therefore maintains a Product Governance and Target Market Policy in line with ESMA Guidelines on MiFID II Product Governance requirements[1], the CIF Law and relevant CySEC Circulars. The product design and approval process require the Portfolio Manager to specify an identified Positive / Negative target market for each PEPP, while ensuring that all relevant risks to such identified target market are assessed and that the intended distribution strategy is consistent with the identified target market and take reasonable steps to ensure that the PEPP is distributed to the identified target market.

10.3. Target market

10.3.1. When identifying a Positive Target Market, the Company shall use the following list of categories:

10.3.1.1. Type of clients to whom the product is targeted.

10.3.1.2. Knowledge and experience of target clients.

10.3.1.3. Financial situation with a focus on the ability of target clients to bear losses.

10.3.1.4. Risk tolerance and compatibility of the risk/reward profile of the product with the target market.

10.3.1.5. Client's objectives and needs.

10.3.2. The Company defines the negative target market as situations where the LifeGoals PEPP is incompatible for any client outside the positive target market.

10.4. Approval process / significant changes

10.4.1. When designing a new LifeGoals PEPP or implementing significant changes to an existing LifeGoals PEPP, the below steps must be followed:

10.4.1.1. The Portfolio Manager will identify a target client market,

10.4.1.2. Risk Manager will assess relevant risks to that target market,

10.4.1.3. A distribution strategy which is consistent with that target market shall be developed.

10.4.1.4. Compliance / Risk / Asset management shall prepare relevant reports to Investment Committee

10.4.1.5. Investment Committee sends recommendation to BoD for approval.

[1] ESMA35-43-620

10.4.1.6. Once the Board of Directors approves of the new LifeGoals PEPP or the changes to an existing LifeGoals PEPP, the new/updated LifeGoals PEPP can be marketed and in case of an existing PEPP, the clients are to be informed of the changes.

10.5. Monitoring and review

As part of its Product Monitoring process (see "Monitor & Review paragraph of PGTMP), the Company shall review the PEPPs it provides on an annual basis, taking into account any event that could materially affect the potential risk to the identified target market, to assess at least whether the PEPPs remain consistent with the needs of the identified target market and whether the intended distribution strategy remains appropriate.

10.6. Distribution

The Company intends to act as the Distributor of LifeGoals PEPP in Cyprus while engaging third parties to act as distributors in other Member States. Where the Company partners with third parties (PEPP distributors) for the sale of LifeGoals PEPP, it shall make available to PEPP distributors all appropriate information on the LifeGoals PEPP and the product approval process, including the identified target market of the PEPP. PEPP distributors shall have in place adequate arrangements to obtain the information referred to in the fifth subparagraph and to understand the characteristics and identified target market of each PEPP.

11. Compliance

11.1. The compliance of the product with the relevant legislation shall be monitored by the Compliance function. In particular, the Compliance officer will monitor that the procedures in place are in compliance with the PEPP Regulation and the relevant guidelines.

11.2. In particular, the Compliance officer shall monitor the following:

Action	Frequency
Risk mitigation techniques	Annually
Portfolio management thresholds	Annually
ESG considerations / factors	Annually
Sales & Marketing	Biannually
Partnerships	Depending on risk categorization of Partner

11.3. The above actions form part of the Company's Compliance Monitoring Program. During assessment, the Compliance officer shall assess compliance of the above actions with the relevant requirements of the PEPP Regulation. A report shall be produced.

11.4. It is noted that the Compliance function will review and approve any PEPP related marketing materials as well as the website (as a whole and the PEPP section) at least on an annual basis. No marketing materials shall be provided to prospective PEPP clients without the prior approval of Compliance function.

12. Organizational structure

12.1. As per Art.6(1)(d) of the Regulation, the LifeGoals PEPP will be provided via the Company's Portfolio Management Function as described in Paragraph 2.3 of these Rules.

12.2. In addition to the above, the Company is required to provide advice to a prospective client prior to the conclusion of the contract. This shall be provided via the Company's platform during the onboarding process as described in paragraph 9.1 above. It is noted that the onboarding process has been overseen by the Investment Advise department of the Company which remains responsible for the provision of advice through the automated service as per Article 34(5) of the Regulation. Following the on boarding of clients, the “Personal Pensions and Investments” department shall provide advice on any PEPP related issues.

12.3. The “Safekeeping of assets” department shall monitor the safekeeping of the clients’ funds as required by the CIF Law (Law 87(I)/2017) and in accordance with the Company’s safekeeping policy and procedures.

13. Anti-Money laundering

13.1. The PEPP is a pension product based on a long-term investment policy and which cannot be liquidated on demand (i.e., no withdrawals are permitted during the lifetime of the PEPP contract). Furthermore, it is provided only to EU citizens who reside within the EU. These factors constitute the PEPP as a “Low Risk” product in terms of AML Risk.

13.2. Nonetheless, the Company is a CySEC regulated entity which makes it an obliged entity under the relevant AML Law (188(I)/2007 as amended). As such the minimum AML procedures must be followed. The Company shall perform the KYC and due diligence process as described in the AML Policy of the Company and keep the records required by the AML legislation.

13.3. Since the PEPP Product is categorized as “Low Risk” which means that it carries a low risk for the product to be used for money laundering, the Company shall proceed with the update of the Clients KYC on a three year basis or where extraordinary circumstances apply.

14. Marketing

The promotion of the PEPP product in the EU requires a strategic approach that leverages various marketing channels and tactics to raise awareness and reach the target audience.

14.1. **Collaborate with local partners:** Seek and establish partnerships with local financial institutions, insurance companies, accounting or legal firms, or other relevant organizations that have established networks and a strong presence in Cyprus and different EU countries. They can help promote PEPP products to their existing customer base.

14.2. **Tailored marketing for each country:** Customized marketing approach for each EU country by considering local language, culture, and market preferences. This will involve translating marketing materials, adapting messaging, and addressing country-specific retirement concerns.

14.3. **Digital marketing:** Leverage online marketing channels like social media, search engine optimization (SEO), search engine marketing (SEM), and email marketing to reach a wide audience across the EU. Create targeted ad campaigns and use geotargeting to ensure that our promotions are seen by people in specific regions.

14.3.1. **Content marketing:** Create informative and engaging marketing material (leaflets, brochures etc.) that educates people about the benefits of PEPP, the importance of saving for retirement, and the unique features of our product. This will include blog posts, articles, videos, podcasts, webinars, and infographics. This content will be shared across the LifeGoals website, social media platforms, and email newsletters.

14.3.2. **Public relations (PR) and media outreach:** We can build relationships with journalists, bloggers, and influencers in the personal finance and retirement planning space.

14.3.3. **Events and workshops:** We will organize an event to raise awareness on PEPP in Cyprus but also we will be participating in financial education events, workshops, conferences, or seminars where we can promote our PEPP product, interact with potential customers, and showcase our expertise in retirement planning.

15. Complaints procedure

15.1. The clients may file a complaint via the platform at https://www.lifegoals.eu/legal/en. The following shall form the process for Complaint's handling:

15.1.1. Personal Pensions & Investments Department shall monitor notifications for complaints.

15.1.2. An officer of the aforementioned department will be responsible for assessing the nature of the complaint and delegating it to the appropriate department. Depending on the nature of the complaint, the following departments shall be responsible for handling complaints (list is not exhaustive):

Nature of complaint	Department
Technical issue (i.e. access to account, failure to login, issues with the account)	Administration / Information Technology
Investments	Portfolio management
Account balance & related questions	Finance
Fees & charges	Sales
Any other legal issue	Compliance department

15.1.3. The respective officer shall inform the Compliance officer of the relevant complaint and action so that it can be recorded accordingly.

15.1.4. The Company shall make every possible effort to respond to client complaints either electronically or in another durable medium. The response shall address all points raised within an adequate timeframe and no later than 15 working days from the date of receipt of the complaint. In exceptional cases, where it is not possible to provide a response within 15 working days due to circumstances beyond the Company's control, a holding reply shall be sent, clearly indicating the reasons for the delay and specifying the deadline by which the client will receive the final response. In any event, the final response shall be provided no later than 35 working days from the date of receipt of the complaint.

15.1.5. Where the complaint cannot be resolved, the matter should be escalated to the Compliance officer. The Compliance officer may then escalate further to Senior Management if required.

15.1.6. A record shall be kept by the Compliance officer.

15.2. The Client may wish to file a Complaint to CySEC or may file a complaint for damages with the Financial Ombudsman.

16. Partnership arrangements

16.1. In accordance with the Regulation, 'partnership' means cooperation between PEPP providers to offer sub-accounts for different Member States in the context of the portability service as described above.

16.2. The Company shall follow the process described in its "Outsourcing Policy" in terms of performing a due diligence process before entering into a partnership with another entity. Such partnerships shall be established by a written agreement between the parties.

16.3. The Company shall communicate, upon request, any information to the relevant Competent Authorities.

16.4. At the time of drafting of these Rules, the Company does not maintain partnerships for the purposes of providing the PEPP.

17. Arrangements with insurance undertakings

The Company does not maintain any arrangements with insurance undertakings.

18. FAQs

The Company shall maintain an FAQs section on its website dedicated to PEPP. It shall be reviewed and updated at least on an annual basis or sooner if needed.

19. Review and update

The Rules shall be reviewed at least annually and updated accordingly. Any changes shall be communicated to the Senior Management for approval.

END OF DOCUMENT

ANNEX I

Switching request Form (Receiving)

I, [client name], hereby request that my PEPP account held with [name of Transferring PEPP Provider] be transferred to the LifeGoals PEPP provided by LifeGoals Financial Services Limited (the "Company").

I further wish to start contributing to my LifeGoals PEPP account on the [insert date].

I hereby give my consent to the Company to perform the following tasks:

a) Request from the [Transferring Provider] the PEPP Benefit Statement from the period from the date of the last drawn up PEPP Benefit Statement to the date of the request;
b) To stop accepting incoming payments on the PEPP account I maintain with [Transferring Provider] with effect from [the date specified by the Client above];
c) To transfer the corresponding amounts, or where applicable, assets-in-kind from the PEPP account to the new LifeGoals PEPP account opened with the Company on [the date specified above];
d) Request from [Transferring Provider] to close the PEPP account on the [date specified by the Client] provided there are no outstanding obligations in that PEPP account.

Name:

[signature]

Switching request Form (Transferring)

I, the undersigned, hereby request that my LifeGoals PEPP account held with LifeGoals Financial Services Limited (the "Company") be transferred to [Receiving Provider].

I further wish to stop contributing to my LifeGoals PEPP account on the [insert date].

I hereby give my consent to the Company to perform the following tasks:

a) Provide to [Receiving Provider] my PEPP Benefit Statement from the period from the date of the last drawn up PEPP Benefit Statement to the date of the request;
b) To stop accepting incoming payments on the LifeGoals PEPP account with effect from [the date specified by the Client above];
c) To transfer the corresponding amounts, or where applicable, assets-in-kind from the LifeGoals PEPP account to the new PEPP account opened with [Receiving Provider] on [the date specified above];
d) Upon completion of the transfer of the corresponding amount, close the LifeGoals PEPP account on the [date specified by the Client] provided there are no outstanding obligations in my LifeGoals PEPP account. I hereby grant the Company the right to debit my LifeGoals PEPP account with any outstanding obligations prior to closing the LifeGoals PEPP account.

Name

[signature]

ANNEX II

Asset Allocation

Equity ESG			
Asset class	**SAA**	**Min**	**Max**
Cash &Cash Equivalents	0%	0%	10%
Fixed Income	0%	0%	0%
Equity	100%	90%	100%
Alternatives	0%	0%	0%

Aggressive ESG			
Asset class	**SAA**	**Min**	**Max**
Cash &Cash Equivalents	5%	5%	25%
Fixed Income	10%	5%	20%
Equity	80%	65%	95%
Alternatives	5%	5%	15%

Growth ESG			
Asset class	**SAA**	**Min**	**Max**
Cash &Cash Equivalents	10%	5%	25%
Fixed Income	20%	0%	30%
Equity	55%	45%	75%
Alternatives	15%	5%	15%

Dynamic ESG			
Asset class	**SAA**	**Min**	**Max**
Cash &Cash Equivalents	15%	5%	35%
Fixed Income	35%	15%	45%
Equity	35%	30%	50%
Alternatives	15%	5%	15%

Balanced ESG			
Asset class	**SAA**	**Min**	**Max**
Cash &Cash Equivalents	25%	5%	35%
Fixed Income	45%	25%	55%
Equity	20%	20%	40%
Alternatives	10%	5%	15%

Conservative ESG			
Asset class	**SAA**	**Min**	**Max**
Cash &Cash Equivalents	40%	20%	60%
Fixed Income	40%	20%	50%
Equity	15%	10%	30%
Alternatives	5%	0%	15%

ANNEX III – LifeGoals PEPP Stochastic Model

Brief Description

The stochastic model allows the reproduction of different possible outcomes from saving for retirement under different investment strategies and therewith, to assess the risk profile and the potential performance of investment strategies.

It simulates different realisations of the financial world and generates, for each of them, the accumulated assets at the end of the accumulation phase, i.e. the end lump sum. The resulting distribution of lump sums allows the calculation of indicators to assess an investment strategy's risk profile and potential performance considering the whole accumulation phase.

The approach used here consists in reproducing the range of possible lump sums that PEPP savers could receive at retirement under different investment strategies. The model assumes an individual joining a PEPP at age 25, 35, 45 and 55 and contributing into it each month in employment a constant proportion of wages until retirement, at age 65. Contributions are invested into a portfolio according to the different investment strategies examined. An annual fee limited to 1% of accumulated assets is charged.

The stochastic model derives uncertainty about financial markets risks by generating 10,000 Monte Carlo simulations. Each simulation represents one possible realisation during the accumulation phase for deriving investment strategy returns, spot rates and inflation rates.

For the financial risks, the model simulated stochastically inflation rates, nominal interest rates and investment strategy returns.

INFLATION RATE MODEL

Description

Inflation rates are modelled using the one factor Vasicek process. The mean-reverting dynamics of the model are driven by three parameters. The stochastic differential equation (SDE) of the model is:

$$dr_t = k(\theta - r_t)dt + \sigma dW_t$$

in which r_t is the inflation rate at time t, k, refers to the speed of mean reversion, ϑ to the level of mean reversion and σ to the volatility.

The model allows to target a certain inflation rate level in the medium-term together with the observed standard deviation of the inflation rates. The speed of the mean reversion together with the current inflation rate can be used to fit the model to the current environment and short-term inflation rate forecasts.

Calibration

The calibration of the inflation rate model uses the ECB inflation target of 2% for the θ-parameter. The monthly YoY-inflation rate time series of the euro zone HICP is used for deriving the standard deviation of the inflation rate in the long term, σ-parameter. From the same time series and by setting these two parameters, the speed of the mean reversion, k-parameter is fitted using the estimator of maximum-log likelihood.

The parameters which maximize the log-likelihood are thereafter used to simulate inflation projections for the euro area using the solution of the above SDE, which is given by:

$$r_t = r_s e^{-k(t-s)} + \theta(1 - e^{-k(t-s)}) + \sigma \int_s^t e^{-k(t-s)}\, dW_u$$

which is Gaussian with mean and variance given by:

$$E[r_t|r_s] = r_s e^{-k(t-s)} + \theta(1 - e^{-k(t-s)})$$

$$V[r_t|r_s] = V\left[\sigma \int_s^t e^{-k(t-s)}\, dW_u\right] = \sigma^2 \int_s^t e^{-2k(t-u)}\, du = \frac{\sigma^2}{2k}(1 - e^{-2k(t-s)}).$$

INTEREST RATE MODEL

Description

Nominal interest rates are modelled as well using the one factor Vasicek short-rate model and its bond pricing formulas. Short rate models like the Vasicek, recover a one-to-one relationship between instantaneous rate and zero-coupon bond prices. Taking the solving SDE of the model, and using the property of the moment generating function the bond of a zero-coupon bond is given by:

$$P(t,T) = e^{A(t,T) - B(t,T)\times r_t}$$

where

$$B(t,T) = \frac{1 - e^{-k(T-t)}}{k}$$

$$A(t,T) = \big(B(t,T) - (T-t)\big)\left(\theta - \frac{\sigma^2}{2k^2}\right) - \frac{\sigma^2 B(t,T)^2}{4k}.$$

Given the exponential form of the zero-coupon bond price, the spot rate is linear in r_t, and the spot rate is given by:

$$R(t,T) = -\frac{A(t,T)}{T-t} + \frac{B(t,T)}{T-t} \times r_t$$

The mean-reverting dynamics of the model assume that the economy tends toward some equilibrium based on such fundamental factors as the long-term monetary policy. In addition to the advantageous feature of mean reversion dynamic, the model allows for negative interest rates without modifications (e.g., through displacements). This feature is beneficial since it allows the model to consider a low yield environment, but on the other hand, it can also output paths with high positive interest rates.

Calibration

The pricing formula that was derived is utilized to calibrate the model parameters, which are then adjusted to align the model's prices with the prevailing market prices. The latest observed yield curve of European AAA rates bonds is utilized to fit the parameters, using the minimization estimator of sum of squared errors (SSE). The fitted parameters are then used to simulate short-rate interest paths that allow the simulation of a spot curve in each time interval. From the simulated spot curves, the spot rate of interest can be recorded.

EQUITY MODEL

Description

The development of the investment strategies is modelled using geometric Brownian motion. The model has two parameters: the volatility σ-parameter, and the equity risk premium λ-parameter. The risk-free rate r_t is provided by the nominal interest rate model. The equation of the model is:

$$dS_t = (r_t + \lambda)S_t dt + \sigma S_t dW_t.$$

The model generates monthly returns for the investment strategies.

Calibration

The yearly volatility is determined by taking the standard deviation of the historical weekly returns of the past 7 years and annualizing the result.

The yearly equity risk premium is the excess return between the geometric mean return of the investment strategy and the 10-year spot rate of the ECB's "All euro area central government bonds yield curve" using weekly returns of the past 7 years and then annualizing the result.

The "risk-free rate" is provided by the nominal interest rate model and is the 10-year spot rate of the spot curve simulated in each time interval.

WAGE MODEL

Description

The model considers constant and continuous monthly contributions without any discontinued period of unemployment during the accumulation phase.