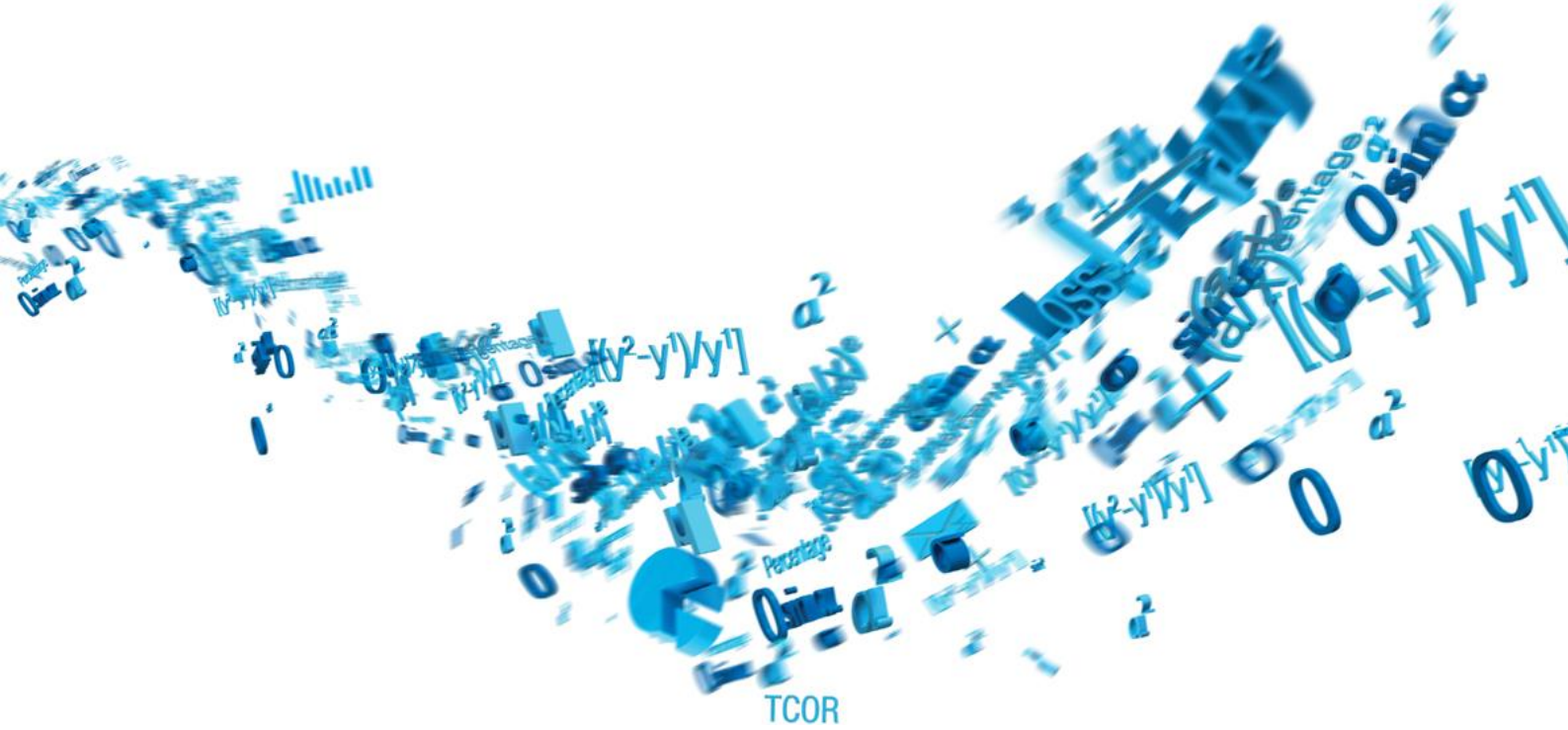

Actuarial Valuation and Design Review Report as at 31 December 2017

Advocates Pension Fund

October 2018

Empower Results®

Prepared for

Trustees of the Advocates Pension Fund

Prepared by

Aon

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1. Executive summary

Introduction

We have carried out a valuation of the Advocates Pension Fund (the Fund). The valuation date is **31 December 2017**. The main purposes of the actuarial valuation are to investigate the current financial position of the Fund and to recommend a funding plan to the Fund for the future.

We have analyzed various design reforms, including parametric changes to the existing benefits structure as well as structural reforms, and estimated the impact on the current financial position of the Fund and on the funding plan for the future.

Pensions Reform

Given the pressures on the long-term financial sustainability of the Fund, the Trustees need to take decisive measures to reform the pension scheme to improve sustainability and restore full funding of Technical Provisions as per the requirements of the Law.

Securing the financial sustainability of pension schemes is a very complex task. Although there are endless variations of reforms that can ensure the long term viability of the scheme, the associated risks and the impact on members can be quite different depending on the chosen reform action plan. For example trebling the contributions or halving the benefits may both ensure the viability of a pension system, however their impact is substantially different in terms of both financial risks and impact to members.

Reforms are best implemented early so that abrupt adjustments to design parameters are avoided. Gradual adjustments have the advantage of making reform more equitable as the burden of adjustment can be spread across many generations of members who will also have more time to adjust their work and savings decisions to the new parameter levels.

Reform options include:

- **Parametric reforms** that keep the system as it is but change system parameters, such as contribution rates, retirement ages, vesting periods, early retirement rules and retirement benefits;

  It is widely clear that the **parametric reforms** to improve sustainability for pension schemes can be addressed in 3 ways:

  - *Revenue measures* (higher contributions/income), or
  - *Benefit measures* (lower benefits), or
  - *Working Longer* (later retirement), or
  - *Combination* of all the above.

- **Structural Reforms** such as transition to defined-contribution that changes the structure of benefits;

If APF delays reforms, then the scale of adjustment to benefits needed in the medium or long term will be more sudden and painful. Such sudden changes make it very difficult for individuals to change their work, retirement and savings decisions to reflect the new financial realities.

Implementation is key to the reform of pension schemes. Reform will only be successful if the planned reforms are capable of being implemented in

a timely and efficient manner with a smooth transitional period.

Criteria for Reform Choice

A set of criteria is required in order to evaluate alternative reform policies and the future design of the APF benefits. For the purposes of this report we have assumed:

- for the parametric changes, that the APF wishes to maintain the core benefit design structure and adjust its parameters to achieve financial sustainability in line with the funding parameters adopted.

- for the structural changes, that the APF wishes to transition to a Defined Contribution plan, in line with market trends across all market sectors (including the government), exploring various transition periods for this shift.

Design Review Scenarios – Summary

The following table presents a summary of the main results for all examined scenarios (parametric changes and structural reforms):

- Funding Level as at 31/12/2017 – ratio of assets versus liabilities.
- Total contributions – (normal employee contributions) + (δικηγορόσημα) + (additional contributions required in order to finance the past service deficit and the cost of future service accrual over a 15-year period).
- Multiple of current contributions – the number of times that the level of contributions currently being payable into the Fund (i.e. EUR 6,3m) need to be increased/decreased (e.g. x2 means that the current contributions need to double; x0,5 means that the current contributions need to halve).

Scenario[1]	Funding Level %	Total Contributions (in EUR millions)	Multiple of Current Contributions[2]
SQ – status quo	23,6%	29,7	x4,7
PC1 – removal of 60% loading (for all members)	36,1%	17,1	x2,7
PC2 – removal of 60% loading (for actives/in-actives only)	33,5%	18,3	x2,9
PC3 – removal of 60% loading & doubling of reduction factor (for actives/in-actives only)	34,3%	17,7	x2,8
PC4 – removal of 60% loading & changing the accrual factor from 1/480 to 1/540 (for actives/in-actives only)	43,9%	11,9	x1,9
PC5 – removal of 60% loading & changing the accrual factor from 1/480 to 1/504 (for actives/in-actives only)	37,3%	15,1	x2,4

[1] PC=Parametric Scenario, SR=Structural Reform
[2] If >1 = increase in contributions, if <1 = decrease in contributions

PC6 – 50% reduction in annual pension (for actives/in-actives only)	51,4%	8,9	x1,4
PC7 – 50% reduction in annual pension & changing the accrual factor from 1/480 to 1/504 & doubling of reduction factor (for actives/in-actives only)	57,2%	6,3	x1,0
SR1 – removal of 60% loading & closure for all future service (for actives/in-actives only)	33,5%	11,8	x1,9
SR2 – dissolution; assets distributed on a flat pro-rata basis for all members	23,6%	n/a	n/a
SR3 – dissolution; pensioners/dependents fully covered & remaining assets distributed to actives/in-actives on a flat pro-rata basis	23,6%	n/a	n/a
SR4 – dissolution; pensioners/dependents fully covered & remaining assets distributed to actives/in-actives based on age-related priority criteria	23,6%	n/a	n/a
SR5 – hybrid scheme over a 30-year transition period	52,5%	1,9	x0,3

Additional Comments:

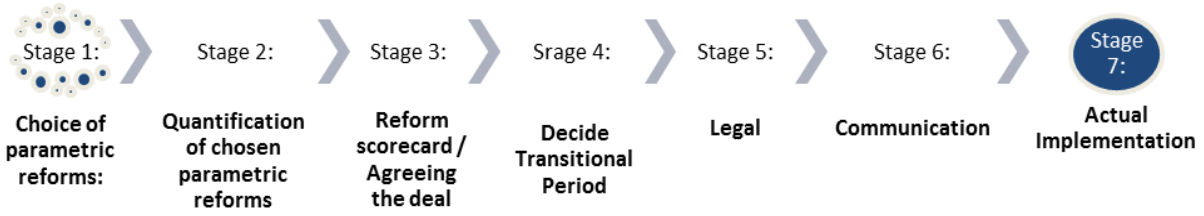
- SR2 – reduction of 76,4% of Defined Benefit liability to all members
- SR3 – full coverage for pensioners/dependents, reduction of 88,4% to Defined Benefit liability of actives/in-actives
- SR4 – full coverage for pensioners/dependents, reduction to Defined Benefit liability ranging from 80,0% to 97,5% depending on age (% increases as age decreases)

The range of scenarios analyzed is not exhaustive. Following discussions with APF, we can provide analyses of additional scenarios or combinations of scenarios.

Proposed process for Implementation

It will be up to the Trustees to decide whether or not to accept any reform recommendations. But whatever the decisions, there will need to be a process to develop the policy from a framework proposal to an implementable blueprint. How this is approached could make a real difference to how and when the reforms are implemented.

We propose a 7-stage process for the formulation and implementation of reforms, as outlined below.



Peer review of Design Review Report

Cronje & Yiannas Actuaries and Consultants Ltd has been engaged by the Advocates Pension Fund to undertake an independent peer review of the design review report prepared by AON. The main Peer Reviewer's findings along with Aon's comments are set out in Appendix 5.

Signed on behalf of Aon

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2. Introduction

Scope of this review

Given the pressures on the long-term financial sustainability of the Fund, the Administrative Committee of the Advocates Pension Fund ("APF") needs to take decisive measures to reform the pension scheme to improve its financial sustainability.

This report sets out the results of our actuarial valuation of the Advocates Pension Fund (the Fund) as at **31 December 2017** and our analysis of various design reforms that can be examined, including parametric changes to the existing benefits structure as well as structural reforms.

The list of reform scenarios examined is not exhaustive, and we are at the APF's disposal to conduct additional analyses as required.

Benefit structure

The actuarial valuation is based on the benefits as defined in the Fund's legal documents at the valuation date.

A summary of these benefits is set out in **Appendix 1**.

Disclaimer

This report (including any enclosures or attachments) is prepared upon instructions from the Administrative Committee of the APF in relation to the provision of actuarial consulting services. It has been prepared at the date, for the purpose and on the basis set out in the report and for the sole exclusive benefit and use of the APF. As such, it should not be used or relied upon by any other person for any other purpose including, without limitation, other professional advisers to the APF and all third parties are hereby notified the report shall not be used as a substitute for any enquiries, procedures or advice which ought to be undertaken or sought by them. We do not accept responsibility for any consequences arising from any third party seeking to rely on this report.

We neither warrant nor represent (either expressly or by implication) to any third party who receives this report that the information in the report is fair, accurate or complete, whether at the date of its preparation or at any other time.

Unless we provide express prior written consent, no part of this report should be reproduced, distributed or communicated to any other person other than to meet any statutory requirements and, in providing this report, we do not accept or assume any responsibility for any other purpose or to anyone other than the APF. This report was based on data available to us as at the effective date of the report and takes no account of developments after that date except where explicitly stated otherwise.

With respect to data on which we have relied in producing our report, whilst we have taken certain limited steps to satisfy ourselves that the data provided to us is of a quality sufficient for the purposes of our investigation, including carrying out certain basic tests for the purpose of detecting manifest inconsistencies, it is not possible for us to confirm the accuracy or completeness of the detailed information provided.

3. Legal Framework

Provisions of Law 208(I)/2012

The law on the activities and supervision of institutions for occupational retirement provision, Law 208(I)/2012 was issued on 28 December 2012 for the purpose of harmonizing national legislation with the EU Directive 2003/41/EC as amended by Article 4 of Directive 2010/78/EU.

We set below extracts from the legislation for ease of reference. Amongst others, the Law defines the following in Article 2(1):

- ***"Fund for Occupational Retirement Provisions"***, *or* ***"Fund"***, *means a Fund, irrespective of its legal form, operating on a funded basis, established in the Republic separately from any sponsoring undertaking or trade union for the purpose of providing retirement benefits in the context of an occupational activity, on the basis of legislation either an agreement or a contract agreed:*

  a) individually or collectively between the employer(s) and the employee(s) or their respective representatives, or

  b) with self-employed persons, in compliance with the legislation applicable in the Republic,

  and which carries out activities directly arising therefrom;

- ***"Pension scheme"*** *means a scheme in place pursuant to legislation, contract, an agreement, a trust deed or rules stipulating which retirement benefits are granted and under which conditions;*

- ***"sponsoring undertaking"*** *means any undertaking or other body, regardless of whether it includes or consists of one or more legal or natural persons, which acts as an employer or in a self-employed capacity or any combination thereof and which pays contributions into a Fund.*

  The definition of the "sponsoring undertaking" in IORPII has been enhanced as follows:

  "sponsoring undertaking" *means any undertaking or other body, regardless of whether it includes or consists of one or more legal or natural persons, which acts as an employer or in a self-employed capacity or any combination thereof and which offers a pension scheme or pays contributions to an IORP;*

  It is worth highlighting that the provisions of IORPII must be incorporated into local legislation by early January 2019 the latest.

According to Article 3(1), the Law applies to all Funds, with the exception of:

- the institutions that apply social security schemes;
- the institutions which fall within the scope of application of any of the following laws:
  - the Law on Insurance Services and other Related Issues,
  - of the Open-end Collective Investment in Transferable Securities (UCITS) and related matters Law,
  - of the Investment Services and Activities and Regulated Markets Law,
  - of the Banking Law, and

  - the Cooperative Societies Law;
- Pension schemes or Funds which operate on a pay-as-you-go basis;
- Funds, the memorandum of association of which provides that the employees of the sponsoring undertakings have no legal rights to benefits and where the sponsoring undertaking can redeem the assets at any time and not necessarily meet its obligations for payment of retirement benefits;
- Companies using book-reserve schemes with a view to paying out retirement benefits to their employees.

Application of Law 208(I)/2012 in the case of the Advocates Pension Fund

From our understanding of the operation and set up of the APF, the following remarks can be made:

- None of the exceptions mentioned in Article 3(1) of the Law apply.
- The APF falls within the definitions mentioned in Article 2(1) of the Law.

Law 208(I)/2012

Principles of Funding, Technical Provisions, Recovery Plan

Article (33) of the Law states the following, amongst others, in relation to the concept of **Technical Provisions**:

- *"All Funds establish at all times in respect of the total range of their pension schemes an adequate amount of liabilities corresponding to the financial commitments which arise out of their portfolio of existing pension contracts, in accordance with the rules of operation of each scheme."*
- *"The calculation of said technical provisions shall take place every year, with valuation date the closure of the financial year. Provided that a calculation is allowed once every three years if the Fund provides members and the Registrar with a certification or a report with valuation date the closure of the financial year. The certification or the report shall reflect the adjusted development of the technical provisions and changes in risks covered."*
- *The calculation of the technical provisions shall be executed and certified by an actuary or, if not by an actuary, by an auditor or another specialist in this field, who shall be approved as qualified by the Registrar, but at all times on the basis of actuarial methods recognised within the Republic […]"*

Article (34) of the Law states the following, amongst others, in relation to the concept of the **Recovery Plan**:

- *"The Fund must have at all times sufficient and appropriate assets to cover the technical provisions in respect of the total range of pension schemes operated."*
- *In the event that the Registrar finds that a Fund has insufficient assets, he/she may, under the provisions of this section, require the Fund to adopt a recovery plan in order to ensure that the above requirements are met within a reasonable timeframe."*

More details are set out in the Sections that follow. The above provisions of the Law have been **taken into consideration** in the actuarial valuation calculations.

Law 208(I)/2012

Vesting Restrictions

Article 29(3) of the Law states the following:

- *"Reduction of accumulated entitlements from the Fund is not permitted, except in the case of voluntary termination of the member's employment prior to the completion of four (4) years of continuous employment at the sponsoring undertaking. Provided that, with regard to a Provident fund, reduction of the accumulated entitlements that arise from the personal contributions of the member is prohibited."*

According to the Rules of the APF, a member is not entitled to any benefit from the Fund in case of termination of employment (due to any reason) before the completion of 25 years of pensionable/contributory service.

In our opinion, this is **non-compliant** with the provisions of Law 208(I)/2012.

Based on our understanding of the legislation, in case of termination of employment with pensionable/contributory service between 0 to 25 years, the member is entitled to the **accrued benefit** based on completed pensionable/contributory service.

We have thus **taken this into consideration** in the actuarial valuation calculations conducted.

Law 208(I)/2012

Regulatory own funds

Amongst others, the Law defines the following in Article 2(1):

- *"**biometrical risks** means risks linked to death, disability and/or longevity;"*

Furthermore, Article 35 of the Law states the following:

- *"Funds operating pension schemes, where the Fund itself, and not the sponsoring undertaking, underwrites the liability to cover against biometric risk, or guarantees a given investment performance or a given level of benefits, shall hold on a permanent basis additional assets above the technical provisions to serve as a buffer."*
- *"The amount of the additional assets shall reflect the type of risk and asset base in respect of the total range of schemes operated."*
- *"The assets shall be free of all foreseeable liabilities and serve as a safety capital to absorb discrepancies between the anticipated and the actual expenses and profits."*
- *"The minimum amount of additional assets or additional fixed assets shall be calculated in accordance with the provisions laid down for this purpose in the Insurance Services and other Related Issues Law, as it may be amended or replaced from time to time."*

Based on the above comments, the APF may need to hold additional assets above the technical provisions to serve as a buffet for the biometrical risks.

For the purposes of the current exercise, we have **not** taken into consideration any regulatory own funds in the actuarial valuation calculations.

Social Insurance Scheme Law

Reduction of benefits and contributions for

Articles 93(1) and 93(2) of the Social Insurance Scheme Law 59(I)/2010 state the following:

- *"Το ποσό οποιασδήποτε περιοδικής πληρωμής, που καταβάλλεται σε μισθωτό ή αναφορικά με μισθωτό, από οποιοδήποτε επαγγελματικό*

Occupational Pension Funds

σχέδιο συντάξεων, για περιόδους απασχόλησης από τις 6 Οκτωβρίου 1980 και μετέπειτα, μειώνεται κατά το ποσό της αντίστοιχης συμπληρωματικής παροχής που καταβάλλεται στο μισθωτό ή αναφορικά με αυτόν δυνάμει του παρόντος Νόμου, με βάση τις ασφαλιστέες αποδοχές, για τις οποίες καταβλήθηκαν εισφορές αναφορικά με το μισθωτό για τις εν λόγω περιόδους."

We understand that the Administrative Committee of the APF, together with their external legal advisors, have investigated whether the Fund needs to apply this Article of the Social Insurance Scheme Law or whether the Fund is exempted with a negative result. As such, for the purposes of this report, we have assumed that the Fund cannot apply these Articles.

4. Actuarial Valuation as at 31 December 2017

Principles of Funding

Pensions vocabulary

Law 208(I) 2012 introduced some pensions terms, including the concept of technical provisions.

Here is a summary of the main terms now in use, further details are set out in the Glossary:

Technical Provisions	The target level of assets that the Trustees following consultation with the Employer decide is appropriate to meet promised benefits.
Funding Objective	To hold sufficient and appropriate assets to meet the **Technical Provisions**.
Funding Principles	A set of principle for meeting the **Funding Objective**.
Recovery Plan	A document summarising a plan of action for correcting a **shortfall** over an agreed period.
Schedule of Contributions	A schedule setting out what contributions are payable, and when.

Principles of Funding

The Trustees and Company are required to agree on three principles:

Principle 1:

What technical provisions to target?

To calculate the **technical provisions**:

- For each year into the future, the benefits paid out by the Scheme are estimated. This is generally considered in real terms for the majority of cashflows, which are linked to inflation (if applicable).
- A target level of assets is agreed on, that is appropriate to meet the expected benefit payments. The conventional approach here is to 'discount back' the expected benefit payments to the valuation date, using an agreed rate of interest known as the **discount rate**.

These 2 steps require a chosen method and assumptions (e.g. how long members live) in order to arrive at a value for the **technical provisions.**

Principle 2:

What contributions to pay for future benefits?

There are several funding methods recognised by the actuarial profession. These result in different calculations of the cost of new final salary benefits.

Principle 3:

How to address any shortfall?

A decision must be taken on how any **shortfall** is addressed.

Purpose of funding	The primary purpose of funding is to provide members with more security for their pensions than if they relied on their employer to pay them directly.
Setting the funding objective	Several factors should be taken into account to set the funding objective: ■ The purpose of funding the Fund. ■ An acceptable level of risk. ■ The requirements of the Fund's Trust Deed and Rules.
Legal Requirements	As per the requirements of Law 208(I) 2012: ▪ *The calculation of the technical provisions shall be executed and certified by an actuary or, if not by an actuary, by another specialist in this field, including an auditor, according to national legislation, on the basis of actuarial methods recognised by the competent authorities of the home Member State, according to the following principles:* ▪ *(a) the minimum amount of the technical provisions shall be calculated by a sufficiently prudent actuarial valuation, taking account of all commitments for benefits and for contributions in accordance with the pension arrangements of the institution. It must be sufficient both for pensions and benefits already in payment to beneficiaries to continue to be paid, and to reflect the commitments which arise out of members' accrued pension rights. The economic and actuarial assumptions chosen for the valuation of the liabilities shall also be chosen prudently taking account, if applicable, of an appropriate margin for adverse deviation;* ▪ *(b) the maximum rates of interest used shall be chosen prudently and determined in accordance with any relevant rules of the home Member State. These prudent rates of interest shall be determined by taking into account:* – *the yield on the corresponding assets held by the institution and the future investment returns and/or* – *the market yields of high-quality or government bonds;*
The agreed funding target / technical provisions	Pension fund liabilities are a series of future cash payments. Other than immediate and deferred annuities provided by an insurance company, the assets that would provide the closest match to these cash flows are bonds of governments from the same area as the liability payments. Hence a **funding target** could be equal to the **present value** of the expected payments discounted at the market yields on government bonds of appropriate term. The expected payments for active members would relate to pensionable service up to the valuation date and would include an allowance for expected future increases to the Pensionable Salary (if relevant). The **funding target** could be calculated using the approach described above. However, it is common for funded occupational pension funds to hold assets less than the full amount of the liabilities valued in this way. Instead, the Company will set a **funding target** at a lower level. **The Trustees of the Scheme may decide to set the discount rate by reference to the single "spot" yield on the AAA-rated euro area central government bonds yield curve at the duration of the liabilities (i.e. 21 years), plus a margin of 100bps to allow for future**

expected returns of the current investment strategy.

As such, the discount rate is set at **2,20% pa**.

The methodology of setting the discount rate is described in detail in **Appendix 2**.

The **funding target** is therefore calculated as the **present value** of the expected payments (as described above) discounted at the rate derived above. It should be noted that neither investing in assets with a higher expected return nor lowering the **funding target** reduces the cost of providing the promised benefits. Such assets bear a higher risk of under-performance which balances the higher expected returns. Other things being equal, if the **funding target** is lower, the Company will pay:

- Lower contributions in the short term; but
- Higher contributions (than would otherwise be payable) thereafter.

Speed of reaching funding target

An adjustment to the contribution rate will be needed to eliminate a **funding surplus** or a **funding deficit** over an agreed period of time. The overall contribution rate may allow for the amortisation of any past service surplus or deficit over the future working lifetime of the current active members.

The Trustees can follow a faster method of recognizing the surplus or deficit if this is required.

Stability of contribution rate

The contribution rate will remain stable before and after eliminating a **funding surplus** or a **funding deficit** if the funding objective remains unchanged and all assumptions made are borne out in practice. If the funding objective changes, then contribution rates are likely to change.

Membership data

Introduction

The Advocates Pension Fund has supplied us with details of the Fund membership at the valuation date. We have carried out general checks on the quality of the data, and checked it against the data used at the previous valuation.

Please notify us if you have any reason to believe that the data we have used is incomplete or inaccurate.

Summary of membership data

The table below presents a summary of the scheme membership data as at 31/12/2017.

All amounts in EURO.

Data item	31/12/2017
Number of active members	3.479
- Average Age (years)	39,9
- Average Pensionable Service (years)	12,3
Number of inactive members	2.149
- Average Age (years)	39,2
- Average Pensionable Service (years)	5,3
Number of pensioners	193
- Average monthly pension	€ 1.008
- Average Age (years)	72,2
Number of dependents/beneficiaries	91
- Average annual pension	€ 430
- Average Age (years)	63,8

Fund Assets and Financial Development

Market Values

The table below presents the market value of plan assets as provided to us by the Fund, as at 31 December 2017.

All amounts in €:

Year ending	31/12/2017
Market value of Assets	66.950.713

Cashflows during the year

As provided by the Fund, the following cash flows have occurred during the period 01/01/17 – 31/12/17.

All amounts in EURO.

Cash flow	01/01/17 – 31/12/17
Contributions	6.322.906
Pension and Lump Sum benefits	3.798.559

Note

We note that the assets used in this report are not based on audited accounts. We note that if the actual amounts differ from those set out in this report, the results of the valuation would change.

Valuation Method & Assumptions

Introduction

The benefit structure of the Plan, its membership and its assets at the valuation date are all known facts. However, the Plan's future finances also depend on uncertain factors such as future investment returns, pay/pension increases, rates of mortality and employee turnover.

Therefore, we need to make long-term assumptions, covering the period until all the present members have retired and all benefits arising from their membership have been paid.

Key financial assumptions

The valuation results are sensitive to the choice of financial assumptions. The table below shows the key financial assumptions adopted for the current actuarial valuation.

Assumption	31/12/2017
Discount rate	2,20%
Pension increases	0,00%

Appendix 2 discusses assumption selection in more detail.

Key demographic assumptions

The table below shows the key demographic assumptions adopted for the current actuarial valuation.

Assumption	31/12/2017
Mortality	BVG2015
Normal Retirement Age	Service-related
Other pre-retirement exits	None

Appendix 2 discusses assumption selection in more detail.

Valuation Method

Different methods affect the pace of funding, but every method should end up with sufficient assets to meet the liabilities as they fall due (provided the assumptions prove to be right and recommended contributions are paid).

For schemes open to new entrants, the Projected Unit method can be used. This is one of the common methods used by actuaries to calculate a recommended contribution rate to the Fund. The method calculates the present value of the benefits expected to accrue to members over a period (often one year) following the valuation date. The present value is usually expressed as a % of the members' pensionable pay. It allows for projected future increases to pay through to retirement or date of leaving service (if applicable). Provided that the distribution of members remains stable, with new members joining to take the place of older leavers, the contribution rate calculated can be expected to remain stable, if all the other assumptions are borne out. If there are no new members, however, the average age will increase and the cost of benefits accruing will rise.

The method used for this valuation is the Projected Unit method.

Actuarial Valuation Results at 31/12/2017

Past service position

The funding objective is to hold assets equal to the funding target. Therefore, we compare the market value of assets with the value of past-service ongoing liabilities. The table below summarizes the past-service results.

Technical Provisions (EUR)	31/12/2017
Actives	(208.296.592)
In-actives	(37.181.960)
Pensioners	(31.671.682)
Dependents / Beneficiaries	(6.878.353)
Total Funding Target / Technical Provisions	**(284.028.587)**
Market Value of Assets	**66.950.713**
Funding Surplus / (Deficit)	**(217.077.874)**
Funding Level	**23,6%**

The following table shows the level of Technical Provisions if no benefit is granted to individuals with less than 25 years of pensionable/contributory service (i.e. in line with the current Rules of the APF).

Technical Provisions (EUR)	***31/12/2017***
Actives	*(202.165.344)*
In-actives	*(12.256.276)*
Pensioners	*(31.671.682)*
Dependents / Beneficiaries	*(6.878.353)*
Total Funding Target / Technical Provisions	***(252.971.655)***
Market Value of Assets	***66.950.713***
Funding Surplus / (Deficit)	***(186.020.942)***
Funding Level	***26,5%***

Compared to the base scenario, the Technical Provisions are reduced by approximately EUR 31 million.

Sensitivity Results

We have performed sensitivity analysis on the valuation assumptions, and the results are as follows:

Technical Provisions – Discount Rate	AAA yield +1,0% (central scenario)	AAA yield +2,0%
Actives	(208.296.592)	*(168.309.184)*
In-actives	(37.181.960)	*(28.093.990)*
Pensioners	(31.671.682)	*(28.933.292)*
Dependents / Beneficiaries	(6.878.353)	*(6.136.401)*
Total Funding Target / Technical Provisions	**(284.028.587)**	***(231.472.867)***
Market Value of Assets	**66.950.713**	***66.950.713***
Funding Surplus / (Deficit)	**(217.077.874)**	***(164.522.154)***
Funding Level	**23,6%**	***28,9%***

Recovery Plan

Definition	Where a valuation shows a **funding shortfall** against the **technical provisions,** trustees must prepare a **recovery plan** setting out how they plan to meet the **funding objective.**
Introduction	A recovery plan must be prepared by the trustees to satisfy the requirements of Article 34 of Law 208(I) 2012, after obtaining the advice of the Scheme Actuary. The recovery plan follows the actuarial valuation of the scheme as at 31 December 2017 which has revealed a funding shortfall (technical provisions minus value of assets) of **€217.077.874**.
Steps to be taken to ensure that the funding objective is met	To eliminate the funding shortfall, the trustees need to agree the **level** and **type** of contributions that will be paid into the Scheme.
Period in which the funding objective should be met	The trustees also need to agree the **period** over which the funding objective should be met. Under the agreed recovery plan, if the assumptions made are borne out in practice and future scheme experience is as expected, then the funding shortfall must eliminated within the chosen period. Trustees should recognize that a longer recovery plan period may be appropriate where technical provisions reflect a particularly low risk approach. Conversely, the impact on scheme risk of adopting weaker technical provisions may result in the need for a proportionately shorter recovery plan period. Recovery periods can be extended especially if additional security provided (see Alternative Financing section below).
Recovery plan options	On the basis of our long-term assumptions there was, at the valuation date, a funding deficit of **€217.077.874**. In some situations, it may be appropriate to assume a higher investment return for the recovery plan than the discount rate used to calculate technical provisions. The extent to which this is appropriate will depend on the level of risk associated with the assumptions used in the technical provisions calculation and investment strategy applying. It is common for pension schemes (similar to that of APF) to consider the best estimate asset returns for the purposes of drafting the recovery plan. As described in detail in **Appendix 2**, at 31 December 2017, it has been calculated that, over the next 10 years, the long-term investment strategy of the Scheme's assets has an expected return of **2,90% pa**. We have thus calculated the level of contributions required to finance the shortfall, assuming a return on assets of 2,90% pa. New entrants have been allowed in the recovery plan calculations (i.e. membership population has been projected to remain stable). Furthermore, we have considered future expected expenses. An annual

increase rate of 2,0% has been applied (i.e. in line with future inflation expectations). We have not applied any increases to the expected future normal employee contributions. We have assumed that δικηγορόσημα will increase annually in line with inflation (i.e. 2,0% p.a.).

The duration of the Scheme's liabilities has been calculated to be 21 years.

We present below some possible options regarding the additional contributions required in order to finance the past service deficit and the cost of future service accrual (i.e. contributions over and above the normal employee contributions + δικηγορόσημα which are required to finance the deficit and to cover benefits being earned in the future).

	Recovery period = 10 years	Recovery period = 15 years	Recovery period = 20 years
Asset return = 2,90%	€31,9M p.a.	€23,4M p.a.	€19,3M p.a.

Justifying where you sit depends on				
	High	Affordability	Low	
	None	Security	Some	

If a recovery period of 15 years is chosen, then an additional contribution of **EUR 23,4 million** will need to be paid on an annual basis for the next **15 years**, in order to finance fully the past service deficit and cover the future service accrual, including new joiners.

As per the information provided for FY2017, the total annual contributions paid into the Scheme were approximately EUR 6,3 million (i.e. employee contributions + δικηγορόσημα). The detailed financing plan projections are presented in the table below:

Year End	Technical Provisions	Expected Benefit Payments + Expenses	Expected Employee Contributions + Δικηγορόσημα	Additional Contributions	Assets	Funding Level
2017	284.028.587	-	-	-	66.950.713	24%
2018	292.982.517	10.730.406	6.698.572	23.356.587	88.568.618	30%
2019	306.105.180	6.998.825	6.799.059	23.356.587	114.702.144	37%
2020	319.051.236	7.603.525	6.901.555	23.356.587	141.085.605	44%
2021	332.036.322	7.999.801	7.006.102	23.356.587	167.939.785	51%
2022	345.065.535	8.384.523	7.112.739	23.356.587	195.292.204	57%
2023	358.587.765	8.398.872	7.221.509	23.356.587	223.535.213	62%
2024	371.907.518	9.066.735	7.332.454	23.356.587	252.033.954	68%
2025	385.284.021	9.475.124	7.445.619	23.356.587	281.061.336	73%
2026	398.843.750	9.769.209	7.561.046	23.356.587	310.750.969	78%
2027	412.562.483	10.097.670	7.678.782	23.356.587	341.089.561	83%
2028	426.524.452	10.363.515	7.798.873	23.356.587	372.161.874	87%
2029	440.909.406	10.476.008	7.921.366	23.356.587	404.147.217	92%
2030	455.570.020	10.738.876	8.046.308	23.356.587	436.922.047	96%
2031	470.535.875	10.978.043	8.173.750	23.356.587	470.535.875	100%

5. Reform Analysis – Parametric Changes

Introduction

The section that follows includes an analysis of various design reforms that can be examined, including parametric changes to the existing benefits structure as well as structural reforms.

The impact of each examined amendment is quantified and compared against the current status (i.e. status quo position)

Status Quo (SQ)

Past service position / Funding Level

Technical Provisions (EUR)	31/12/2017
Actives	(208.296.592)
In-actives	(37.181.960)
Pensioners	(31.671.682)
Dependents / Beneficiaries	(6.878.353)
Total Funding Target / Technical Provisions	**(284.028.587)**
Market Value of Assets	**66.950.713**
Funding Surplus / (Deficit)	**(217.077.874)**
Funding Level	**23,6%**

Recovery Plan

Year End	Technical Provisions	Expected Benefit Payments + Expenses	Expected Employee Contributions + Δικηγορόσημα	Additional Contributions	Assets	Funding Level
2017	284.028.587	-	-	-	66.950.713	24%
2018	292.982.517	10.730.406	6.698.572	23.356.587	88.568.618	30%
2019	306.105.180	6.998.825	6.799.059	23.356.587	114.702.144	37%
2020	319.051.236	7.603.525	6.901.555	23.356.587	141.085.605	44%
2021	332.036.322	7.999.801	7.006.102	23.356.587	167.939.785	51%
2022	345.065.535	8.384.523	7.112.739	23.356.587	195.292.204	57%
2023	358.587.765	8.398.872	7.221.509	23.356.587	223.535.213	62%
2024	371.907.518	9.066.735	7.332.454	23.356.587	252.033.954	68%
2025	385.284.021	9.475.124	7.445.619	23.356.587	281.061.336	73%
2026	398.843.750	9.769.209	7.561.046	23.356.587	310.750.969	78%
2027	412.562.483	10.097.670	7.678.782	23.356.587	341.089.561	83%
2028	426.524.452	10.363.515	7.798.873	23.356.587	372.161.874	87%
2029	440.909.406	10.476.008	7.921.366	23.356.587	404.147.217	92%
2030	455.570.020	10.738.876	8.046.308	23.356.587	436.922.047	96%
2031	470.535.875	10.978.043	8.173.750	23.356.587	470.535.875	100%

Comments:

- Funding Level as at 31/12/2017: 23,6%
- Additional Deficit Contributions over the next 15 years: EUR 23,4m
- Currently, the total annual contributions (Employee Contributions + Δικηγορόσημα) payable into the Fund are EUR 6,3m. Under the SQ scenario, Total Contributions of 4,7 times the 2017 contributions are required to restore funding at 100% over the next 15 years.
- Under this scenario, all related risks with the defined benefit design remain (as set out in Annex 3). In case the Defined Benefit design is maintained, we recommend the introduction of a mechanism that would monitor the funding plan and trigger the necessary design reforms to

restore funding to required levels, if necessary.

Parametric Change 1 (PC1) – Immediate removal of 60% loading on annual pension for BOTH current and future beneficiaries

Introduction

As per the APF Rules, the Trustees may offer (on a discretionary basis) a 60% loading on the annual pension, in case the financial position of the Fund allows such benefit enhancement; i.e. annual pension is increased from EUR 9.350 to EUR 14.960. Currently, the Fund pays this additional benefit and has thus been taken into consideration in the actuarial calculations of the SQ scenario.

The PC1 scenario removes the 60% loading on annual pension for both the current and future beneficiaries (current beneficiaries: pensioners/dependents, future beneficiaries: actives/in-actives).

Past service position / Funding Level

Technical Provisions (EUR)	**31/12/2017**
Actives	(136.904.160)
In-actives	(24.679.674)
Pensioners	(19.794.802)
Dependents / Beneficiaries	(4.298.971)
Total Funding Target / Technical Provisions	**(185.677.607)**
Market Value of Assets	**66.950.713**
Funding Surplus / (Deficit)	**(118.726.894)**
Funding Level	**36,1%**

Recovery Plan

Year End	Technical Provisions	Expected Benefit Payments + Expenses	Expected Employee Contributions + Δικηγορόσημα	Additional Contributions	Assets	Funding Level
2017	185.677.607	-	-	-	66.950.713	36%
2018	190.040.735	8.581.377	6.698.572	10.814.376	78.025.810	41%
2019	198.546.092	4.724.920	6.799.059	10.814.376	93.437.462	47%
2020	206.886.629	5.168.588	6.901.555	10.814.376	108.951.466	53%
2021	215.267.600	5.411.884	7.006.102	10.814.376	124.776.156	58%
2022	223.689.827	5.650.446	7.112.739	10.814.376	140.927.494	63%
2023	232.519.376	5.576.298	7.221.509	10.814.376	157.734.362	68%
2024	241.131.958	6.097.267	7.332.454	10.814.376	174.614.322	72%
2025	249.785.680	6.360.366	7.445.619	10.814.376	191.833.360	77%
2026	258.585.329	6.526.848	7.561.046	10.814.376	209.501.647	81%
2027	267.497.644	6.733.810	7.678.782	10.814.376	227.593.522	85%
2028	276.586.708	6.891.064	7.798.873	10.814.376	246.174.119	89%
2029	285.993.764	6.925.149	7.921.366	10.814.376	265.385.021	93%
2030	295.573.052	7.106.642	8.046.308	10.814.376	285.097.499	96%
2031	305.351.000	7.266.123	8.173.750	10.814.376	305.351.000	100%

Comments:

- Funding Level as at 31/12/2017: 36,1% (SQ scenario: 23,6%)
- Additional Deficit Contributions over the next 15 years: EUR 10,8m (SQ scenario: EUR 23,4m)
- Currently, the total annual contributions (Employee Contributions + Δικηγορόσημα) payable into the Fund are EUR 6,3m. Under the PC1 scenario, Total Contributions of 2,7 times the 2017 contributions are required to restore funding at 100% over the next 15 years.
- Under this scenario, all related risks with the defined benefit design remain (as set out in Annex 3). In case the Defined Benefit design is maintained, we recommend the introduction of a

mechanism that would monitor the funding plan and trigger the necessary design reforms to restore funding to required levels, if necessary.

Parametric Change 2 (PC2) – Immediate removal of 60% loading on annual pension for the future beneficiaries ONLY

Introduction

As per the APF Rules, the Trustees may offer (on a discretionary basis) a 60% loading on the annual pension, in case the financial position of the Fund allows such benefit enhancement; i.e. annual pension is increased from EUR 9.350 to EUR 14.960. Currently, the Fund pays this additional benefit and has thus been taken into consideration in the actuarial calculations of the SQ scenario.

The PC2 scenario removes the 60% loading on annual pension for the future beneficiaries only (future beneficiaries: actives/in-actives). This implies that no change is applied on the members who are currently receiving a benefit from the Fund.

Past service position / Funding Level

Technical Provisions (EUR)	31/12/2017
Actives	(136.904.160)
In-actives	(24.679.674)
Pensioners	(31.671.682)
Dependents / Beneficiaries	(6.878.353)
Total Funding Target / Technical Provisions	**(200.133.869)**
Market Value of Assets	**66.950.713**
Funding Surplus / (Deficit)	**(133.183.156)**
Funding Level	**33,5%**

Recovery Plan

Year End	Technical Provisions	Expected Benefit Payments + Expenses	Expected Employee Contributions + Δικηγορόσημα	Additional Contributions	Assets	Funding Level
2017	200.133.869	-	-	-	66.950.713	33%
2018	203.759.696	9.623.758	6.698.572	12.000.345	78.171.466	38%
2019	211.533.818	5.745.971	6.799.059	12.000.345	93.754.634	44%
2020	219.150.010	6.167.039	6.901.555	12.000.345	109.468.054	50%
2021	226.816.828	6.386.450	7.006.102	12.000.345	125.522.171	55%
2022	234.533.279	6.599.839	7.112.739	12.000.345	141.935.125	61%
2023	242.669.938	6.499.192	7.221.509	12.000.345	159.038.076	66%
2024	250.602.465	6.992.270	7.332.454	12.000.345	176.250.998	70%
2025	258.590.825	7.226.057	7.445.619	12.000.345	193.842.389	75%
2026	266.740.812	7.361.765	7.561.046	12.000.345	211.925.043	79%
2027	275.021.474	7.536.462	7.678.782	12.000.345	230.476.033	84%
2028	283.500.798	7.659.954	7.798.873	12.000.345	249.563.304	88%
2029	292.319.696	7.658.807	7.921.366	12.000.345	269.331.315	92%
2030	301.334.312	7.803.630	8.046.308	12.000.345	289.654.257	96%
2031	310.574.534	7.925.049	8.173.750	12.000.345	310.574.534	100%

Comments:

- Funding Level as at 31/12/2017: 33,5% (SQ scenario: 23,6%)
- Additional Deficit Contributions over the next 15 years: EUR 12,0m (SQ scenario: EUR 23,4m)
- Currently, the total annual contributions (Employee Contributions + Δικηγορόσημα) payable into the Fund are EUR 6,3m. Under the PC2 scenario, Total Contributions of 2,9 times the 2017 contributions are required to restore funding at 100% over the next 15 years.

- Under this scenario, all related risks with the defined benefit design remain (as set out in Annex 3). In case the Defined Benefit design is maintained, we recommend the introduction of a mechanism that would monitor the funding plan and trigger the necessary design reforms to restore funding to required levels, if necessary.

Parametric Change 3 (PC3) – Immediate removal of 60% loading on annual pension AND increase of the reduction factor from 6% per annum to 12% per annum in case of early retirement (for the future beneficiaries ONLY)

Introduction

The PC3 scenario removes the 60% loading on annual pension and doubles the reduction factor in case a member chooses to retire early, for the future beneficiaries only. This implies that no change is applied on the members who are currently receiving a benefit from the Fund.

Past service position / Funding Level

Technical Provisions (EUR)	**31/12/2017**
Actives	(132.411.792)
In-actives	(24.312.066)
Pensioners	(31.671.682)
Dependents / Beneficiaries	(6.878.353)
Total Funding Target / Technical Provisions	**(195.273.893)**
Market Value of Assets	**66.950.713**
Funding Surplus / (Deficit)	**(128.323.180)**
Funding Level	**34,3%**

Recovery Plan

Year End	Technical Provisions	Expected Benefit Payments + Expenses	Expected Employee Contributions + Δικηγορόσημα	Additional Contributions	Assets	Funding Level
2017	195.273.893	-	-	-	66.950.713	34%
2018	198.582.535	9.568.711	6.698.572	11.370.168	77.588.056	39%
2019	206.019.665	5.701.113	6.799.059	11.370.168	92.560.560	45%
2020	213.322.631	6.092.607	6.901.555	11.370.168	107.675.605	50%
2021	220.689.709	6.293.885	7.006.102	11.370.168	123.132.389	56%
2022	228.128.912	6.483.019	7.112.739	11.370.168	138.955.293	61%
2023	235.992.246	6.374.254	7.221.509	11.370.168	155.459.315	66%
2024	243.643.015	6.868.901	7.332.454	11.370.168	172.054.349	71%
2025	251.389.124	7.062.315	7.445.619	11.370.168	189.050.888	75%
2026	259.281.333	7.206.883	7.561.046	11.370.168	206.512.450	80%
2027	267.342.851	7.342.810	7.678.782	11.370.168	224.463.666	84%
2028	275.600.791	7.465.797	7.798.873	11.370.168	242.934.282	88%
2029	284.195.022	7.463.374	7.921.366	11.370.168	262.069.049	92%
2030	292.991.050	7.598.461	8.046.308	11.370.168	281.750.258	96%
2031	302.037.946	7.692.520	8.173.750	11.370.168	302.037.946	100%

Comments:

- Funding Level as at 31/12/2017: 34,3% (SQ scenario: 23,6%)
- Additional Deficit Contributions over the next 15 years: EUR 11,3m (SQ scenario: EUR 23,4m)
- Currently, the total annual contributions (Employee Contributions + Δικηγορόσημα) payable into the Fund are EUR 6,3m. Under the PC3 scenario, Total Contributions of 2,8 times the 2017 contributions are required to restore funding at 100% over the next 15 years.
- Under this scenario, all related risks with the defined benefit design remain (as set out in Annex

3). In case the Defined Benefit design is maintained, we recommend the introduction of a mechanism that would monitor the funding plan and trigger the necessary design reforms to restore funding to required levels, if necessary.

- Compared to the PC2 scenario, the impact of doubling the reduction factor in case of early retirement appears to be relatively insignificant.

Parametric Change 4 (PC4) – Immediate removal of 60% loading on annual pension AND change of the accrual factor from 1/480 to 1/540 (for the future beneficiaries ONLY)

Introduction

For the future beneficiaries only, the PC4 scenario removes the 60% loading on annual pension and alters the accrual factor so as the annual pension of EUR 9.350 is fully accrued after 45 years of service (i.e. 540 months of service). Currently, the annual pension of EUR 9.350 is fully accrued after 40 years of service (i.e. 480 months of service).

In particular, the benefit structure is amended as follows:

<< Εισφορέας, ο οποίος παύει να ασκεί το επάγγελμά του, δικαιούται να λάβει πλήρη σύνταξη αφυπηρέτησης, νοουμένου τηρεί μίαν από τις ακόλουθες προϋποθέσεις:

- *Συμπλήρωση 45ετούς ασκήσεως του επαγγέλματός του, ανεξαρτήτως της ηλικίας του.*
- *Συμπλήρωση 40ετούς ασκήσεως του επαγγέλματός του και συμπλήρωση της ηλικίας των εβδομήντα ετών. Εισφορέας, ο οποίος συμπλήρωσε 40ετή άσκηση του επαγγέλματός του, αλλά δεν έχει συμπληρώσει το εβδομηκοστό (70°) έτος της ηλικίας του, δικαιούται να συνταξιοδοτηθεί, με μειωμένη όμως σύνταξη της άλλως πως υπολογισθείσας, ως ακολούθως:*
  - *κατά 30% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό πέμπτο (65°) έτος της ηλικίας του,*
  - *κατά 24% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό έκτο (66°) έτος της ηλικίας του,*
  - *κατά 18% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό έβδομο (67°) έτος της ηλικίας του,*
  - *κατά 12% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό όγδοο (68°) έτος της ηλικίας του, και*
  - *κατά 6% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό ένατο (69°) έτος της ηλικίας του.*
- *Συμπλήρωση 30ετούς ασκήσεως του επαγγέλματός του και συμπλήρωση της ηλικίας των εβδομήντα πέντε ετών. Εισφορέας, ο οποίος έχει συμπληρώσει 30ετή άσκηση του επαγγέλματός του, αλλά δεν έχει συμπληρώσει το εβδομηκοστό πέμπτο (75°) έτος της ηλικίας του, δικαιούται να συνταξιοδοτηθεί, με μειωμένη όμως σύνταξη της άλλως πως κανονικά υπολογισθείσας, ως ακολούθως:*
  - *κατά 30% της υπολογισθείσας, αν συμπλήρωσε το εβδομηκοστό (70°) έτος της ηλικίας του,*
  - *κατά 24% της υπολογισθείσας, αν συμπλήρωσε το εβδομηκοστό πρώτο (71°) έτος της ηλικίας του,*
  - *κατά 18% της υπολογισθείσας, αν συμπλήρωσε το εβδομηκοστό δεύτερο (72°) έτος της ηλικίας του,*
  - *κατά 12% της υπολογισθείσας, αν συμπλήρωσε το εβδομηκοστό τρίτο (73°) έτος της ηλικίας του, και*
  - *κατά 6% της υπολογισθείσας, αν συμπλήρωσε το εβδομηκοστό τέταρτο (74°) έτος της ηλικίας του.*

Η καταβλητέα σύνταξη υπολογίζεται προς ένα πεντακοσιοστό τεσσαρακοστό (1/540) των εννέα χιλιάδων τριακοσίων πενήντα ευρώ (€9.350) για κάθε συμπληρωμένο μήνα ασκήσεως του επαγγέλματος μετ' εισφορών. >>

As a further note, no change is applied on the members who are currently receiving a benefit from the Fund.

Past service position / Funding Level

Technical Provisions (EUR)	31/12/2017
Actives	(97.100.792)
In-actives	(16.831.418)
Pensioners	(31.671.682)
Dependents / Beneficiaries	(6.878.353)
Total Funding Target / Technical Provisions	**(152.482.245)**
Market Value of Assets	**66.950.713**
Funding Surplus / (Deficit)	**(85.531.532)**
Funding Level	**43,9%**

Recovery Plan

Year End	Technical Provisions	Expected Benefit Payments + Expenses	Expected Employee Contributions + Δικηγορόσημα	Additional Contributions	Assets	Funding Level
2017	152.482.245	-	-	-	66.950.713	44%
2018	158.512.636	6.359.026	7.796.332	5.616.872	76.121.390	48%
2019	166.981.900	4.260.435	7.896.819	5.616.872	87.790.221	53%
2020	175.613.449	4.447.240	7.999.315	5.616.872	99.713.422	57%
2021	184.431.354	4.607.988	8.103.862	5.616.872	111.926.912	61%
2022	193.537.990	4.673.035	8.210.499	5.616.872	124.538.340	64%
2023	199.984.452	4.852.513	8.319.269	5.616.872	137.445.362	69%
2024	206.238.403	5.255.675	8.430.214	5.616.872	150.431.883	73%
2025	212.321.620	5.616.186	8.543.379	5.616.872	163.545.759	77%
2026	218.331.565	5.879.637	8.658.806	5.616.872	176.891.469	81%
2027	224.405.985	6.003.283	8.776.542	5.616.872	190.619.928	85%
2028	230.898.439	5.836.421	8.896.633	5.616.872	205.039.351	89%
2029	237.091.096	6.333.148	9.019.126	5.616.872	219.499.103	93%
2030	243.311.647	6.500.416	9.144.068	5.616.872	234.337.078	96%
2031	249.666.560	6.569.356	9.271.510	5.616.872	249.666.560	100%

Comments:

- Funding Level as at 31/12/2017: 43,9% (SQ scenario: 23,6%)
- Additional Deficit Contributions over the next 15 years: EUR 5,6m (SQ scenario: EUR 23,4m)
- Currently, the total annual contributions (Employee Contributions + Δικηγορόσημα) payable into the Fund are EUR 6,3m. Under the PC4 scenario, Total Contributions of 1,9 times the 2017 contributions are required to restore funding at 100% over the next 15 years.
- Under this scenario, all related risks with the defined benefit design remain (as set out in Annex 3). In case the Defined Benefit design is maintained, we recommend the introduction of a mechanism that would monitor the funding plan and trigger the necessary design reforms to restore funding to required levels, if necessary.

Parametric Change 5 (PC5) – Immediate removal of 60% loading on annual pension AND change of the accrual factor from 1/480 to 1/504 (for the future beneficiaries ONLY)

Introduction

For the future beneficiaries only, the PC5 scenario removes the 60% loading on annual pension and alters the accrual factor so as the annual pension of EUR 9.350 is fully accrued after 42 years of service (i.e. 504 months of service). Currently, the annual pension of EUR 9.350 is fully accrued after 40 years of service (i.e. 480 months of service).

In particular, the benefit structure is amended as follows:

<< Εισφορέας, ο οποίος παύει να ασκεί το επάγγελμά του, δικαιούται να λάβει πλήρη σύνταξη αφυπηρέτησης, νοουμένου τηρεί μίαν από τις ακόλουθες προϋποθέσεις:

- *Συμπλήρωση 42ετούς ασκήσεως του επαγγέλματός του, ανεξαρτήτως της ηλικίας του.*
- *Συμπλήρωση 37ετούς ασκήσεως του επαγγέλματός του και συμπλήρωση της ηλικίας των εξήντα επτά ετών. Εισφορέας, ο οποίος συμπλήρωσε 37ετή άσκηση του επαγγέλματός του, αλλά δεν έχει συμπληρώσει το εξηκοστό έβδομο (67°) έτος της ηλικίας του, δικαιούται να συνταξιοδοτηθεί, με μειωμένη όμως σύνταξη της άλλως πως υπολογισθείσας, ως ακολούθως:*
  - *κατά 30% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό δεύτερο (62°) έτος της ηλικίας του,*
  - *κατά 24% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό τρίτο (63°) έτος της ηλικίας του,*
  - *κατά 18% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό τέταρτο (64°) έτος της ηλικίας του,*
  - *κατά 12% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό πέμπτο (65°) έτος της ηλικίας του, και*
  - *κατά 6% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό έκτο (66°) έτος της ηλικίας του.*
- *Συμπλήρωση 27ετούς ασκήσεως του επαγγέλματός του και συμπλήρωση της ηλικίας των εβδομήντα δύο ετών. Εισφορέας, ο οποίος έχει συμπληρώσει 27ετή άσκηση του επαγγέλματός του, αλλά δεν έχει συμπληρώσει το εβδομηκοστό δεύτερο (72°) έτος της ηλικίας του, δικαιούται να συνταξιοδοτηθεί, με μειωμένη όμως σύνταξη της άλλως πως κανονικά υπολογισθείσας, ως ακολούθως:*
  - *κατά 30% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό έβδομο (67°) έτος της ηλικίας του,*
  - *κατά 24% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό όγδοο (68°) έτος της ηλικίας του,*
  - *κατά 18% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό ένατο (69°) έτος της ηλικίας του,*
  - *κατά 12% της υπολογισθείσας, αν συμπλήρωσε το εβδομηκοστό (70°) έτος της ηλικίας του, και*
  - *κατά 6% της υπολογισθείσας, αν συμπλήρωσε το εβδομηκοστό πρώτο (71°) έτος της ηλικίας του.*

Η καταβλητέα σύνταξη υπολογίζεται προς ένα πεντακοσιοστό τέταρτο (1/504) των εννέα χιλιάδων τριακοσίων πενήντα ευρώ (€9.350) για κάθε συμπληρωμένο μήνα ασκήσεως του επαγγέλματος μετ' εισφορών. >>

As a further note, no change is applied on the members who are currently receiving a benefit from the Fund.

Past service position / Funding Level

Technical Provisions (EUR)	**31/12/2017**
Actives	(119.765.552)
In-actives	(21.363.780)
Pensioners	(31.671.682)
Dependents / Beneficiaries	(6.878.353)
Total Funding Target / Technical Provisions	**(179.679.367)**
Market Value of Assets	**66.950.713**
Funding Surplus / (Deficit)	**(112.728.654)**
Funding Level	**37,3%**

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Recovery Plan

Year End	Technical Provisions	Expected Benefit Payments + Expenses	Expected Employee Contributions + Δικηγορόσημα	Additional Contributions	Assets	Funding Level
2017	179.679.367	-	-	-	66.950.713	37%
2018	186.636.289	8.180.296	7.796.332	8.802.463	77.505.353	42%
2019	197.200.522	4.989.991	7.896.819	8.802.463	91.705.711	47%
2020	204.583.009	5.161.288	7.999.315	8.802.463	106.249.586	52%
2021	211.889.755	5.509.023	8.103.862	8.802.463	120.970.071	57%
2022	219.006.760	5.940.220	8.210.499	8.802.463	135.789.774	62%
2023	226.145.964	6.154.349	8.319.269	8.802.463	150.933.961	67%
2024	233.330.941	6.352.524	8.430.214	8.802.463	166.430.465	71%
2025	240.950.643	6.226.601	8.543.379	8.802.463	182.620.550	76%
2026	248.323.535	6.740.738	8.658.806	8.802.463	198.877.383	80%
2027	255.764.555	6.937.323	8.776.542	8.802.463	215.527.399	84%
2028	263.394.433	7.036.646	8.896.633	8.802.463	232.683.086	88%
2029	271.124.505	7.204.355	9.019.126	8.802.463	250.292.211	92%
2030	279.021.790	7.309.215	9.144.068	8.802.463	268.434.195	96%
2031	287.258.391	7.284.613	9.271.510	8.802.463	287.258.391	100%

Comments:

- Funding Level as at 31/12/2017: 37,3% (SQ scenario: 23,6%)
- Additional Deficit Contributions over the next 15 years: EUR 8,8m (SQ scenario: EUR 23,4m)
- Currently, the total annual contributions (Employee Contributions + Δικηγορόσημα) payable into the Fund are EUR 6,3m. Under the PC5 scenario, Total Contributions of 2,4 times the 2017 contributions are required to restore funding at 100% over the next 15 years.
- Under this scenario, all related risks with the defined benefit design remain (as set out in Annex 3). In case the Defined Benefit design is maintained, we recommend the introduction of a mechanism that would monitor the funding plan and trigger the necessary design reforms to restore funding to required levels, if necessary.

Parametric Change 6 (PC6) – 50% reduction of the annual pension for future beneficiaries only

Introduction

The PC6 scenario halves the annual pension for future beneficiaries only; i.e. annual pension is decreased from EUR 9.350 to EUR 4.675. This implies that no change is applied on the members who are currently receiving a benefit from the Fund.

Past service position / Funding Level

Technical Provisions (EUR)	**31/12/2017**
Actives	(77.410.480)
In-actives	(14.261.104)
Pensioners	(31.671.682)
Dependents / Beneficiaries	(6.878.353)
Total Funding Target / Technical Provisions	**(130.221.619)**
Market Value of Assets	**66.950.713**
Funding Surplus / (Deficit)	**(63.270.906)**
Funding Level	**51,4%**

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Recovery Plan

Year End	Technical Provisions	Expected Benefit Payments + Expenses	Expected Employee Contributions + Δικηγορόσημα	Additional Contributions	Assets	Funding Level
2017	130.221.619	-	-	-	66.950.713	51%
2018	129.407.360	8.701.552	6.698.572	2.536.809	69.507.172	54%
2019	132.724.362	4.701.926	6.799.059	2.536.809	76.298.374	57%
2020	135.899.004	4.969.966	6.901.555	2.536.809	83.120.091	61%
2021	139.133.914	5.041.990	7.006.102	2.536.809	90.174.155	65%
2022	142.423.087	5.112.603	7.112.739	2.536.809	97.470.887	68%
2023	146.071.748	4.916.125	7.221.509	2.536.809	105.290.456	72%
2024	149.514.932	5.263.550	7.332.454	2.536.809	113.098.528	76%
2025	153.013.130	5.351.834	7.445.619	2.536.809	121.159.925	79%
2026	156.655.016	5.355.562	7.561.046	2.536.809	129.570.096	83%
2027	160.403.968	5.402.122	7.678.782	2.536.809	138.298.083	86%
2028	164.314.427	5.406.988	7.798.873	2.536.809	147.397.818	90%
2029	168.494.950	5.311.139	7.921.366	2.536.809	156.984.719	93%
2030	172.804.561	5.357.591	8.046.308	2.536.809	166.931.086	97%
2031	177.273.403	5.380.887	8.173.750	2.536.809	177.273.403	100%

Comments:

- Funding Level as at 31/12/2017: 51,4% (SQ scenario: 23,6%)
- Additional Deficit Contributions over the next 15 years: EUR 2,5m (SQ scenario: EUR 23,4m)
- Currently, the total annual contributions (Employee Contributions + Δικηγορόσημα) payable into the Fund are EUR 6,3m. Under the PC6 scenario, Total Additional Contributions of 1,4 times the 2017 contributions are required to restore funding at 100% over the next 15 years.
- Under this scenario, all related risks with the defined benefit design remain (as set out in Annex 3). In case the Defined Benefit design is maintained, we recommend the introduction of a mechanism that would monitor the funding plan and trigger the necessary design reforms to restore funding to required levels, if necessary.

Parametric Change 7 (PC7) – Combination of scenarios PC3, PC5 and PC6

Introduction

For the future beneficiaries only, the PC7 scenario applies a 50% reduction in the annual pension, alters the accrual factor so as the annual pension of EUR 9.350 is fully accrued after 42 years of service (i.e. 504 months of service), and doubles the reduction factor in case a member chooses to retire early.

This implies that no change is applied on the members who are currently receiving a benefit from the Fund.

Past service position / Funding Level

Technical Provisions (EUR)	31/12/2017
Actives	(66.083.856)
In-actives	(12.428.085)
Pensioners	(31.671.682)
Dependents / Beneficiaries	(6.878.353)
Total Funding Target / Technical Provisions	**(117.061.976)**
Market Value of Assets	**66.950.713**
Funding Surplus / (Deficit)	**(50.111.263)**
Funding Level	**57,2%**

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Recovery Plan

Year End	Technical Provisions	Expected Benefit Payments + Expenses	Expected Employee Contributions + Δικηγορόσημα	Additional Contributions	Assets	Funding Level
2017	117.061.976	-	-	-	66.950.713	57%
2018	118.508.988	7.457.799	7.796.332	52.283	69.362.100	59%
2019	123.433.147	4.194.938	7.896.819	52.283	75.256.652	61%
2020	126.518.800	4.246.153	7.999.315	52.283	81.375.662	64%
2021	129.488.298	4.493.711	8.103.862	52.283	87.528.580	68%
2022	132.312.320	4.750.333	8.210.499	52.283	93.709.346	71%
2023	135.191.385	4.808.416	8.319.269	52.283	100.122.358	74%
2024	138.145.396	4.851.062	8.430.214	52.283	106.792.252	77%
2025	141.474.372	4.632.327	8.543.379	52.283	113.993.902	81%
2026	144.555.194	5.008.707	8.658.806	52.283	121.141.377	84%
2027	147.743.369	5.032.935	8.776.542	52.283	128.592.701	87%
2028	151.079.191	5.030.129	8.896.633	52.283	136.386.535	90%
2029	154.541.697	5.038.871	9.019.126	52.283	144.523.567	94%
2030	158.143.068	5.037.459	9.144.068	52.283	153.026.570	97%
2031	162.018.201	4.928.131	9.271.510	52.283	162.018.201	100%

Comments:

- Funding Level as at 31/12/2017: 57,2% (SQ scenario: 23,6%)
- Additional Deficit Contributions over the next 15 years: EUR 0,05m (SQ scenario: EUR 23,4m)
- Currently, the total annual contributions (Employee Contributions + Δικηγορόσημα) payable into the Fund are EUR 6,3m. Under the PC7 scenario, Total Contributions of 1,0 times the 2017 contributions (i.e. same) are required to restore funding at 100% over the next 15 years.
- Under this scenario, all related risks with the defined benefit design remain (as set out in Annex 3). In case the Defined Benefit design is maintained, we recommend the introduction of a mechanism that would monitor the funding plan and trigger the necessary design reforms to restore funding to required levels, if necessary.

Note

The parametric scenarios presented are examples to illustrate the effect of various parametric changes to the scheme design. Additional parametric scenarios or combinations of parametric scenarios can be examined following discussion with the APF.

6. Reform Analysis – Structural Changes

Structural Reform 1 (SR1) – Closure of Fund for all future service AND immediate removal of 60% loading on annual pension (for the future beneficiaries ONLY). Defined Contribution for new entrants and future service.

Introduction

Under scenario SR1, the Fund is closed for new entrants, existing active members do not accrue any benefit for service after 31/12/2017, and there is an immediate removal of the 60% loading on annual pension for the future beneficiaries only.

This implies that no change is applied on the members who are currently receiving a benefit from the Fund.

Past service position / Funding Level

Technical Provisions (EUR)	31/12/2017
Actives	(136.904.160)
In-actives	(24.679.674)
Pensioners	(31.671.682)
Dependents / Beneficiaries	(6.878.353)
Total Funding Target / Technical Provisions	**(200.133.869)**
Market Value of Assets	**66.950.713**
Funding Surplus / (Deficit)	**(133.183.156)**
Funding Level	**33,5%**

Recovery Plan

Year End	Technical Provisions	Expected Benefit Payments + Expenses	Expected Employee Contributions + Δικηγορόσημα	Additional Contributions	Assets	Funding Level
2017	200.133.869	-	-	-	66.950.713	33%
2018	193.537.012	9.623.478	5.099.692	5.445.630	69.900.772	36%
2019	192.633.366	5.716.771	5.200.179	5.445.630	77.002.735	40%
2020	191.432.008	6.092.730	5.302.675	5.445.630	84.034.751	44%
2021	190.145.302	6.259.512	5.407.222	5.445.630	91.209.090	48%
2022	188.784.587	6.410.092	5.513.859	5.445.630	98.548.466	52%
2023	187.616.054	6.289.592	5.622.629	5.445.630	106.334.844	57%
2024	186.136.755	6.679.787	5.733.574	5.445.630	114.065.378	61%
2025	184.599.257	6.822.632	5.846.739	5.445.630	121.991.642	66%
2026	183.088.290	6.881.136	5.962.166	5.445.630	130.207.196	71%
2027	181.603.228	6.943.478	6.079.902	5.445.630	138.718.912	76%
2028	180.201.862	6.966.367	6.199.993	5.445.630	147.577.822	82%
2029	178.955.208	6.893.575	6.322.486	5.445.630	156.893.526	88%
2030	177.764.954	6.925.746	6.447.428	5.445.630	166.575.317	94%
2031	176.668.992	6.925.770	6.574.870	5.445.630	176.668.992	100%

Comments:

- Funding Level as at 31/12/2017: 33,5% (SQ scenario: 23,6%)
- Additional Deficit Contributions over the next 15 years: EUR 5,4m (SQ scenario: EUR 23,4m)
- Currently, the total annual contributions (Employee Contributions + Δικηγορόσημα) payable into the Fund are EUR 6,3m. Under the SR1 scenario, Total Contributions of 1,9 times the 2017 contributions are required to restore funding at 100% over the next 15 years.
- For future service and new entrants to APF, we recommend the introduction of a Defined

Contribution scheme. The exact parameters of such a DC scheme are not examined as part of this report.

- Under this scenario, all related risks with the defined benefit design remain (as set out in Annex 3) for past service benefits. These will be mitigated over the longer terms once the current population of the fund retires and stops receiving benefits

Structural Reform 2 (SR2) – Immediate dissolution of the Fund and conversion to a Defined Contribution Provident Fund (assets distributed on a flat pro-rata basis for ALL members)

Introduction

Under scenario SR2, the Fund is dissolved immediately and the assets are distributed to the members according to the current / status quo Funding Level.

Past service position / Funding Level

Technical Provisions (EUR)	31/12/2017
Actives	(208.296.592)
In-actives	(37.181.960)
Pensioners	(31.671.682)
Dependents / Beneficiaries	(6.878.353)
Total Funding Target / Technical Provisions	**(284.028.587)**
Market Value of Assets	**66.950.713**
Funding Surplus / (Deficit)	**(217.077.874)**
Funding Level	**23,6%**

Comments:

- Under SR2, the Fund is dissolved immediately and the assets are distributed to each member individually on a flat pro-rata basis.
- A Funding Level of 23,6% means that the existing assets are enough to cover only a portion of the defined benefit that each member is eligible according to the Rules of the APF.
- If the decision is to apply an equal distribution to all members (i.e. actives, in-actives, pensioners, dependents), then each member will receive an amount equal to 23,6%of the Defined Benefit liability (value of benefits earned for service until the valuation date).
- The Defined Benefit liability is calculated per individual, thus based on the actuarial valuation, the assets will be distributed to each member individually in order to cover 23,6% of each one's defined benefit entitlement.
- For future service and new entrants to APF, we recommend the introduction of a Defined Contribution scheme. The exact parameters of such a DC scheme are not examined as part of this report.

Structural Reform 3 (SR3) – Immediate dissolution of the Fund and conversion to a Defined Contribution Provident Fund (current beneficiaries fully covered; remaining assets distributed to future beneficiaries on a flat pro-rata basis)

Introduction

Under scenario SR3, the Fund is dissolved immediately. The assets are firstly used to cover the current beneficiaries in full (i.e. members who are currently receiving a benefit from the Fund – pensioners, dependents). The residual assets, if any, are then distributed to the future beneficiaries (i.e. actives, in-actives).

Past service position / Funding Level

Technical Provisions (EUR)	31/12/2017
Actives	(208.296.592)
In-actives	(37.181.960)
Pensioners	(31.671.682)
Dependents / Beneficiaries	(6.878.353)
Total Funding Target / Technical Provisions	**(284.028.587)**
Market Value of Assets	**66.950.713**
Funding Surplus / (Deficit)	**(217.077.874)**
Funding Level	**23,6%**

Comments:

- Under scenario SR3, the Fund is dissolved immediately. The assets are firstly used to cover the current beneficiaries in full.
- This implies that EUR 38,6m are immediately distributed to each pensioner/dependent according to its individual defined benefit entitlement.
- The remaining EUR 28,4m are then distributed to each active/in-active on a flat pro-rata basis.
- Under this scenario, the current beneficiaries are covered in full, whereas the future beneficiaries receive an amount equal to 11,6%% of the Defined Benefit liability
- For future service and new entrants to APF, we recommend the introduction of a Defined Contribution scheme. The exact parameters of such a DC scheme are not examined as part of this report.

Structural Reform 4 (SR4) – Immediate dissolution of the Fund and conversion to a Defined Contribution Provident Fund (current beneficiaries fully covered; remaining assets distributed to future beneficiaries based on priority levels)

Introduction

Under scenario SR4, the Fund is dissolved immediately. The assets are firstly used to cover the current beneficiaries in full (i.e. members who are currently receiving a benefit from the Fund – pensioners, dependents). The residual assets, if any, are then distributed to the future beneficiaries based on priority criteria (i.e. actives, in-actives).

Past service position / Funding Level

Technical Provisions (EUR)	31/12/2017
Actives	(208.296.592)
In-actives	(37.181.960)
Pensioners	(31.671.682)
Dependents / Beneficiaries	(6.878.353)
Total Funding Target / Technical Provisions	**(284.028.587)**
Market Value of Assets	**66.950.713**
Funding Surplus / (Deficit)	**(217.077.874)**
Funding Level	**23,6%**

Comments:

- Under scenario SR4, the Fund is dissolved immediately. The assets are firstly used to cover the current beneficiaries in full.
- This implies that EUR 38,6m are immediately distributed to each pensioner/dependent according to its individual defined benefit entitlement.

- The remaining EUR 28,4m are then distributed to each active/in-active based on the following age-related priority criteria (aim to protect members who are closer to retirement):

Age (in years)	% of Defined Benefit liability
20-40	2,5%
40-50	5,0%
50-55	10,0%
55-60	15,0%
60+	20,0%

- Under this scenario, the current beneficiaries are covered in full, whereas the future beneficiaries receive a % of their Defined Benefit liability according to their age (ranging from 20,0% to 2,5%).
- For future service and new entrants to APF, we recommend the introduction of a Defined Contribution scheme. The exact parameters of such a DC scheme are not examined as part of this report.

Structural Reform 5 (SR5) – Introduction of a hybrid scheme

Introduction

Under scenario SR5, members will be able to accrue/accumulate both Defined Benefit (DB) as well as Defined Contribution (DC) benefits during a 30-year transition period. At the outset, there will be two different plans: the existing DB plan and a new DC Provident Fund. Benefit accrual from the DB plan will gradually run down during a 30-year period (in a linear approach), after which members will only accumulate benefits under the DC Provident Fund.

The following table presents the pension and lump sum benefits payable from the DB plan, for an individual retiring in each of the next 30 years having completed 40 years of service.

Time (in years)	Reduction Factor (RF)	Annual Pension (in EUR)	Lump sum (in EUR)
0	0%	9.350	24.000
1	3%	9.038	23.200
2	7%	8.727	22.400
3	10%	8.415	21.600
4	13%	8.103	20.800
5	17%	7.792	20.000
6	20%	7.480	19.200
7	23%	7.168	18.400
8	27%	6.857	17.600
9	30%	6.545	16.800
10	33%	6.233	16.000
11	37%	5.922	15.200
12	40%	5.610	14.400
13	43%	5.298	13.600
14	47%	4.987	12.800
15	50%	4.675	12.000
16	53%	4.363	11.200
17	57%	4.052	10.400
18	60%	3.740	9.600
19	63%	3.428	8.800
20	67%	3.117	8.000

21	70%	2.805	7.200
22	73%	2.493	6.400
23	77%	2.182	5.600
24	80%	1.870	4.800
25	83%	1.558	4.000
26	87%	1.247	3.200
27	90%	935	2.400
28	93%	623	1.600
29	97%	312	800
30	100%	-	-

Example

Benefits payable to an individual who retires after 25 years having completed 40 years of service (i.e. 480 months):

- Annual pension from the DB plan

  = (1/480) x 9.350 x 480 months x (1-RF)

  = (1/480) x 9.350 x 480 x (1-83%)

  = **EUR 1.558**

- Lump sum from the DB plan

  = 600 x 40 years x (1-RF)

  = 600 x 40 x (1-83%)

  = **EUR 4.000**

- Accumulated balance from the DC Provident Fund (function of contributions and investment returns during a 25-year period). The exact parameters of such a DC scheme are not examined as part of this report.

Past service position / Funding Level

Technical Provisions (EUR)	**31/12/2017**
Actives	(81.210.904)
In-actives	(7.822.794)
Pensioners	(31.671.682)
Dependents / Beneficiaries	(6.878.353)
Total Funding Target / Technical Provisions	**(127.583.733)**
Market Value of Assets	**66.950.713**
Funding Surplus / (Deficit)	**(60.633.020)**
Funding Level	**52,5%**

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Recovery Plan

Year End	Technical Provisions	Expected Benefit Payments + Expenses	Expected Employee Contributions + Δικηγορόσημα	Additional Contributions	Assets	Funding Level
2017	127.583.733	-	-	-	66.950.713	52%
2018	123.043.045	9.623.758	6.698.572	(4.438.850)	61.495.606	50%
2019	122.296.715	5.713.568	6.799.059	(4.438.850)	59.952.185	49%
2020	121.038.350	6.077.357	6.901.555	(4.438.850)	58.100.446	48%
2021	119.473.366	6.236.259	7.006.102	(4.438.850)	56.141.395	47%
2022	117.605.897	6.378.983	7.112.739	(4.438.850)	54.090.483	46%
2023	115.762.490	6.248.462	7.221.509	(4.438.850)	52.224.419	45%
2024	113.421.110	6.598.447	7.332.454	(4.438.850)	50.063.378	44%
2025	110.798.976	6.718.133	7.445.619	(4.438.850)	47.834.704	43%
2026	107.987.461	6.750.830	7.561.046	(4.438.850)	45.627.006	42%
2027	104.968.169	6.800.523	7.678.782	(4.438.850)	43.426.026	41%
2028	101.794.838	6.802.059	7.798.873	(4.438.850)	41.283.234	41%
2029	98.580.451	6.712.576	7.921.366	(4.438.850)	39.295.117	40%
2030	95.240.371	6.704.462	8.046.308	(4.438.850)	37.386.141	39%
2031	91.800.411	6.666.554	8.173.750	(4.438.850)	35.591.395	39%
2032	88.418.085	6.493.048	8.303.740	(4.438.850)	34.054.366	39%
2033	84.657.100	6.702.775	8.436.330	(4.438.850)	32.396.451	38%
2034	80.975.724	6.471.899	8.571.572	(4.438.850)	31.063.821	38%
2035	77.233.079	6.398.840	8.709.518	(4.438.850)	29.908.602	39%
2036	73.383.057	6.339.977	8.850.224	(4.438.850)	28.924.379	39%
2037	69.658.700	6.086.879	8.993.743	(4.438.850)	28.316.037	41%
2038	66.016.384	5.884.437	9.140.134	(4.438.850)	28.046.044	42%
2039	62.320.195	5.807.151	9.289.451	(4.438.850)	28.000.268	45%
2040	58.650.657	5.651.041	9.441.756	(4.438.850)	28.268.243	48%
2041	54.927.715	5.564.103	9.597.106	(4.438.850)	28.792.035	52%
2042	51.197.658	5.429.509	9.755.563	(4.438.850)	29.630.601	58%
2043	47.459.111	5.301.660	9.917.190	(4.438.850)	30.789.488	65%
2044	43.829.839	5.065.449	10.082.049	(4.438.850)	32.391.235	74%
2045	40.386.018	4.787.138	10.250.205	(4.438.850)	34.494.783	85%
2046	37.023.591	4.602.039	10.421.724	(4.438.850)	37.023.591	100%

Comments:

- Funding Level as at 31/12/2017: 52,5% (SQ scenario: 23,6%)
- Additional Deficit Contributions over the next 30 years: Nil (SQ scenario: EUR 23,4m)
- Currently, the total annual contributions payable into the Fund are EUR 6,3m. Under the SR5 scenario, the current contributions can be decreased by up to 70%. This can be used to divert contributions to the Defined Contribution section of the hybrid arrangement.

Appendix 1: Summary of plan provisions

Εισαγωγικά

Το Ταμείο Συντάξεως Δικηγόρων καλύπτει όλους τους δικηγόρους, οι οποίοι ασκούν το επάγγελμα, περιλαμβανομένου των Νομικών Λειτουργών. Το Ταμείο χρηματοδοτείται μέσω εισφορών των μελών του, και παρέχει ωφελήματα σε περίπτωση αφυπηρέτησης, θανάτου ή ανικανότητας για εργασία.

Υπαγωγή

Το Ταμείο Συντάξεως Δικηγόρων καλύπτει κάθε Δικηγόρο που ασκεί το επάγγελμά του (εγγεγραμμένος στο Μητρώο Δικηγόρων), και κάθε Νομικό Λειτουργό ο οποίος διορίσθηκε στη Νομική Υπηρεσία κατά την περίοδο από την 14η Σεπτεμβρίου 1966 μέχρι την 18η Μαρτίου 2005 και κατέβαλε εισφορές στο Ταμείο προτού διαγραφεί από αυτό. Σε περίπτωση διορισμού σε δικαστικό ή δημόσιο λειτούργημα (εξαιρουμένου του Νομικού Λειτουργού), το Μέλος παύει να είναι εισφορέας και θεωρείται ότι απεσύρθη από το επάγγελμά του.

Το Ταμείο καλύπτει Δικηγόρους και Εισαγγελείς, ενώ δεν καλύπτει Δικαστές, το Γενικό Εισαγγελέα και το Βοηθό Γενικό Εισαγγελέα.

Συντάξιμες Αποδοχές

Οι παροχές δεν σχετίζονται με τις απολαβές των Μελών.

Συντάξιμη Υπηρεσία

Οι συμπληρωμένοι μήνες ασκήσεως του δικηγορικού επαγγέλματος μετ΄εισφορών.

Σύνταξη Αφυπηρέτησης

Εισφορέας, ο οποίος παύει να ασκεί το επάγγελμά του, δικαιούται να λάβει πλήρη σύνταξη αφυπηρέτησης, νοουμένου τηρεί μίαν από τις ακόλουθες προϋποθέσεις:

- Συμπλήρωση σαρανταετούς ασκήσεως του επαγγέλματός του, ανεξαρτήτως της ηλικίας του.
- Συμπλήρωση τριακοπενταετούς ασκήσεως του επαγγέλματός του και συμπλήρωση της ηλικίας των εξήντα πέντε ετών. Εισφορέας, ο οποίος συμπλήρωσε τριακοπενταετή άσκηση του επαγγέλματός του, αλλά δεν έχει συμπληρώσει το εξηκοστό πέμπτο (65°) έτος της ηλικίας του, δικαιούται να συνταξιοδοτηθεί, με μειωμένη όμως σύνταξη της άλλως πως υπολογισθείσας, ως ακολούθως:
  - κατά 30% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό (60°) έτος της ηλικίας του,
  - κατά 24% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό πρώτο (61°) έτος της ηλικίας του,
  - κατά 18% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό δεύτερο (62°) έτος της ηλικίας του,
  - κατά 12% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό τρίτο (63°) έτος της ηλικίας του, και
  - κατά 6% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό τέταρτο (64°) έτος της ηλικίας του.
- Συμπλήρωση εικοσιπενταετούς ασκήσεως του επαγγέλματός του και συμπλήρωση της ηλικίας των εβδομήντα ετών. Εισφορέας, ο οποίος έχει συμπληρώσει εικοσιπενταετή άσκηση του επαγγέλματός του, αλλά δεν έχει συμπληρώσει το εβδομηκοστό (70°) έτος της ηλικίας του, δικαιούται να συνταξιοδοτηθεί, με μειωμένη όμως σύνταξη της άλλως πως κανονικά υπολογισθείσας, ως ακολούθως:

- κατά 30% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό πέμπτο (65°) έτος της ηλικίας του,
- κατά 24% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό έκτο (66°) έτος της ηλικίας του,
- κατά 18% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό έβδομο (67°) έτος της ηλικίας του,
- κατά 12% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό όγδοο (68°) έτος της ηλικίας του, και
- κατά 6% της υπολογισθείσας, αν συμπλήρωσε το εξηκοστό ένατο (69°) έτος της ηλικίας του.

Η καταβλητέα σύνταξη υπολογίζεται προς ένα τετρακοσιοστό ογδοηκοστό (1/480) των εννέα χιλιάδων τριακοσίων πενήντα ευρώ (€9.350) για κάθε συμπληρωμένο μήνα ασκήσεως του επαγγέλματος μετ' εισφορών.

Επιπλέον, παρέχεται χορήγημα 60% επί της βασικής μηνιαίας σύνταξης δυνάμει του Καν. 7(α) και της απόφασης του Δ.Σ. ημερομηνίας 5/11/97.

Η Διαχειριστική Επιτροπή δύναται, αν το επιτρέπει η οικονομική κατάσταση του Ταμείου, να χορηγεί δεκάτη τρίτη ή και δέκατη τέταρτη μηνιαία σύνταξη.

Εφάπαξ Αφυπηρέτησης

Σε περίπτωση που εισφορέας αποσύρεται από την άσκηση του επαγγέλματός του και πληροί τις προϋποθέσεις που ισχύουν για τη σύνταξη αφυπηρέτησης, δικαιούται να λάβει εφάπαξ ποσό ίσον με εξακόσια ευρώ (€600) ανά έτος άσκησης του επαγγέλματος με εισφορές.

Το εφάπαξ ποσό είναι μειωμένο κατ' ανάλογα αντίστοιχο ποσοστό εκείνου της υπολογισθείσας καταβλητέας μηνιαίας σύνταξης αφυπηρέτησης.

Παράδειγμα Σύνταξης Αφυπηρέτησης

Στοιχεία

- Ηλικία Αφυπηρέτησης = 65
- Έτη εξάσκησης επαγγέλματος με εισφορές (ΕΕΕ) = 35
- Συντάξιμη Υπηρεσία (ΣΥ) = 420 Μήνες

Υπολογισμοί

- Μηνιαία Σύνταξη = (1/480) Χ 9.350 Χ ΣΥ /12 Χ (1+60%) = (1/480) Χ 9.350 Χ 420 Χ / 12 Χ (1+60%) = **1.090,83**
- Εφάπαξ Αφυπηρέτησης = 600 Χ ΣΥ /12 = 600 Χ 420 / 12 = **21.000**

Σύνταξη Αναπηρίας

Εισφορέας δικαιούται να λάβει σύνταξη αναπηρίας, νοουμένου έχει συμπληρώσει δεκαπενταετή υπηρεσία ως δικηγόρος και έχει καταστεί ανίκανος να συνεχίσει την άσκηση του επαγγέλματός του λόγω ανιάτου ασθενείας ή οποιασδήποτε πνευματικής ή σωματικής αναπηρίας.

Η καταβλητέα σύνταξη υπολογίζεται προς ένα τετρακοσιοστό ογδοηκοστό (1/480) των εννέα χιλιάδων τριακοσίων πενήντα ευρώ (€9.350) για κάθε συμπληρωμένο μήνα ασκήσεως του επαγγέλματος μετ' εισφορών.

Επιπλέον, παρέχεται χορήγημα 60% επί της βασικής μηνιαίας σύνταξης δυνάμει του Καν. 7(α) και της απόφασης του Δ.Σ. ημερομηνίας 5/11/97.

Η Διαχειριστική Επιτροπή δύναται, αν το επιτρέπει η οικονομική κατάσταση του Ταμείου, να χορηγεί δεκάτη τρίτη ή και δέκατη τέταρτη μηνιαία σύνταξη.

Εισφορέας ηλικίας άνω των εβδομήντα ετών, ο οποίος έχει συμπληρώσει

δεκαπέντε αλλά όχι είκοσι πέντε έτη ασκήσεως του επαγγέλματος μετ' εισφορών, δεν δικαιούται σύνταξη αναπηρίας.

Εφάπαξ Αναπηρίας

Σε περίπτωση που εισφορέας αποσύρεται από την άσκηση του επαγγέλματός του και πληροί τις προϋποθέσεις που ισχύουν για τη σύνταξη αναπηρίας, δικαιούται να λάβει εφάπαξ ποσό ίσον με εξακόσια ευρώ (€600) ανά έτος άσκησης του επαγγέλματος με εισφορές.

Σε περίπτωση που ο εισφορέας δεν έχει συμπληρώσει δεκαπενταετή υπηρεσία μετ' εισφορών και καθίσταται ανίκανος να συνεχίσει την άσκηση του δικηγορικού επαγγέλματος λόγω ανιάτου ασθενείας ή οποιασδήποτε πνευματικής ή σωματικής αναπηρίας, η Διαχειριστική Επιτροπή δύναται να καταβάλει στον εισφορέα εφάπαξ χορήγημα μη υπερβαίνον το διπλάσιο του ποσού των υπ'αυτού καταβληθεισών εισφορών στο Ταμείο.

Σύνταξη σε περίπτωση Θανάτου

Σε περίπτωση θανάτου εισφορέα με δεκαπενταετή τουλάχιστο άσκηση του δικηγορικού επαγγέλματος μετ' εισφορών, πληρώνεται σύνταξη χηρείας/ορφάνιας, ανάλογα της περίστασης.

Η καταβλητέα σύνταξη υπολογίζεται προς ένα τετρακοσιοστό ογδοηκοστό (1/480) των εννέα χιλιάδων τριακοσίων πενήντα ευρώ (€9.350) για κάθε συμπληρωμένο μήνα ασκήσεως του επαγγέλματος μετ' εισφορών.

Επιπλέον, παρέχεται χορήγημα 60% επί της βασικής μηνιαίας σύνταξης δυνάμει του Καν. 7(α) και της απόφασης του Δ.Σ. ημερομηνίας 5/11/97.

Καταβάλλεται το 50% της σύνταξης εάν υπάρχει μόνον ένας δικαιούχος. Το ποσοστό αυξάνεται ανάλογα με των αριθμό των δικαιούχων.

Η Διαχειριστική Επιτροπή δύναται, αν το επιτρέπει η οικονομική κατάσταση του Ταμείου, να χορηγεί δεκάτη τρίτη ή και δέκατη τέταρτη μηνιαία σύνταξη.

Εφάπαξ σε περίπτωση Θανάτου

Σε περίπτωση θανάτου εισφορέα που πληροί τις προϋποθέσεις που ισχύουν για τη σύνταξη χηρείας/ορφάνιας, πληρώνεται εφάπαξ ποσό ίσον με εξακόσια ευρώ (€600) ανά έτος άσκησης του επαγγέλματος με εισφορές, στη(ο) χήρα(ο) και τα τέκνα του αποβιώσαντος εισφορέα.

Σε περίπτωση θανάτου εισφορέα που δεν έχει συμπληρώσει δεκαπενταετή υπηρεσία μετ' εισφορών, η Διαχειριστική Επιτροπή δύναται να καταβάλει στη(ο) χήρα(ο) και τα τέκνα εφάπαξ χορήγημα μη υπερβαίνον το διπλάσιο του ποσού των προσωπικών εισφορών του αποβιώσαντος στο Ταμείο.

Εισφορές

Εισφορέας καθίσταται κάθε δικηγόρος που ασκεί το επάγγελμά του και είναι εγγεγραμμένος στο Μητρώο Δικηγόρων. Σε περίπτωση διορισμού σε δικαστικό ή δημόσιο λειτούργημα (εξαιρουμένου του Νομικού Λειτουργού) ή σε περίπτωση διαγραφής από το Μητρώο Δικηγόρων, το Μέλος παύει να είναι εισφορέας και θεωρείται ότι απεσύρθη της ασκήσεως του επαγγέλματός του.

Το ποσό της μηνιαίας εισφοράς ανέρχεται:

- στα σαράντα ευρώ (€40) για εισφορείς που είναι είδη εγγεγραμμένοι στο Μητρώο Δικηγόρων, ή
- στα πενήντα ευρώ (€50) για εισφορείς που δεν είναι εγγεγραμμένοι

στο Μητρώο Δικηγόρων (για σκοπούς εγγραφής στο Μητρώο Δικηγόρων και εξασφάλιση της άδειας εξασκήσεως επαγγέλματος).

Appendix 2: Valuation assumptions

Introduction

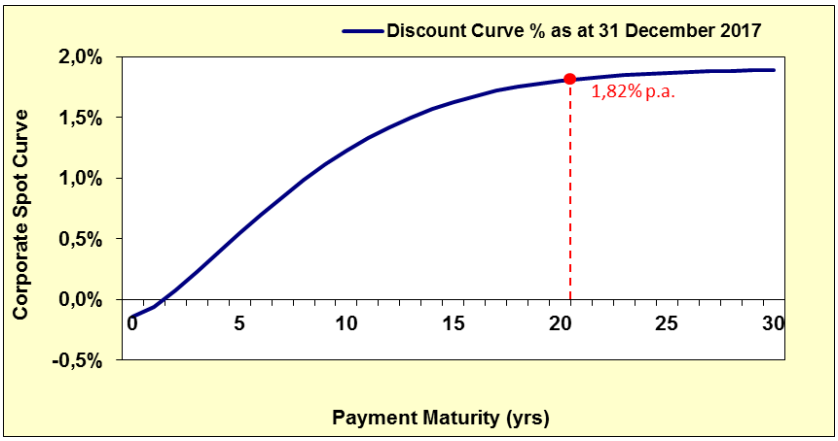
The assumptions used for assessing the long-term ongoing funding target are summarized below. Greater importance should be attached to the valuation assumptions as a whole rather than to the individual elements. More importantly, the differences between the financial assumptions have a greater effect on valuation results than the absolute levels of each item.

The financial assumptions have the most significant effect on valuation results and are thus described first.

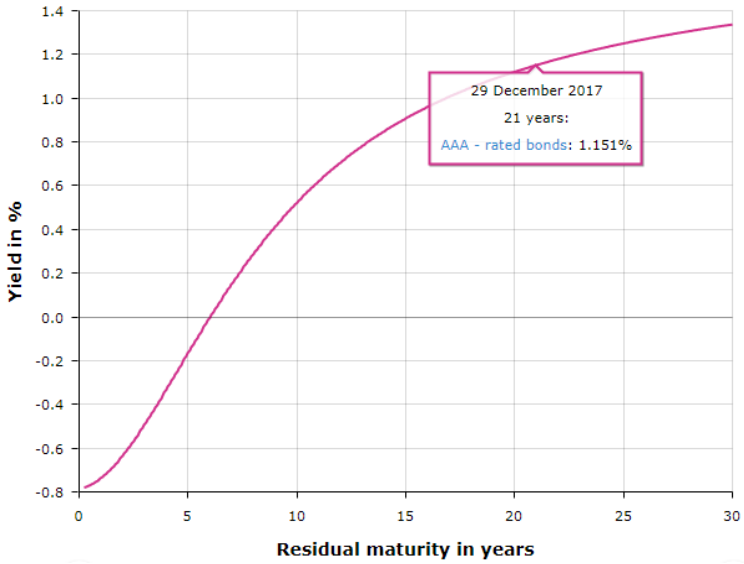
Discount rate

The discount rate is the valuation assumption with the widest range of choices. It is used to translate the estimated future benefit payments from the Scheme into a single figure which represents the amount that the Scheme needs to hold today to provide them.

The chart below shows the full Aon Hewitt Eurozone Yield Curve as at 31 December 2017.



The chart below shows the Euro area yield curve as at 31 December 2017 as published by ECB, which is based on AAA-rated euro area central government bonds.



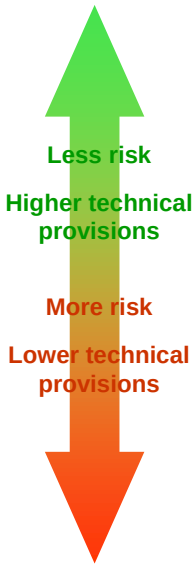
All charts show the point on the yield curves with approximately the same duration as the Scheme's liabilities (i.e. 21 years). The rates are also summarized in the following table:

Yield Curve	31/12/2017
Aon Hewitt Eurozone Yield Curve (AA-rated euro area corporate bonds)	1,82% p.a.
Euro Area Yield Curve (AAA-rated euro area central govt bonds)	1,15% p.a.

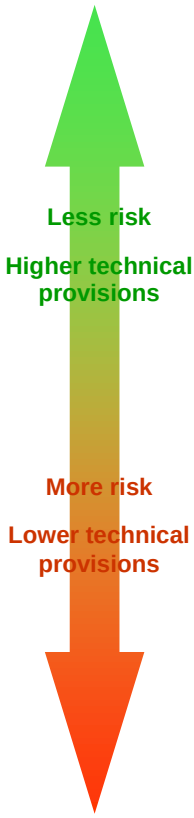
As per the requirements of Law 208(I) 2012, the maximum rates of interest used shall be chosen prudently and determined in accordance with any relevant rules of the home Member State. These prudent rates of interest shall be determined by taking into account:

- the yield on the corresponding assets held by the institution and the future investment returns, and/or
- the market yields of high-quality or government bonds.

Thus, the full spectrum of choices for setting the discount rate assumption is presented in the following charts:



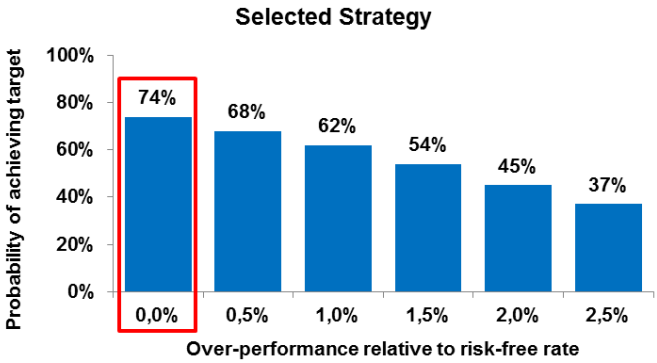
Government bond yields	• Could construct portfolio of Government bonds • **Eliminate all investment risk (i.e. risk-free rate)**
Corporate bond yields	• Could construct portfolio of Corporate bonds • **Eliminate most investment risk, but not risk of default** • Used for accounting purposes
Bond yields plus allowance for scheme assets to outperform bonds	• Allows for scheme assets to outperform bonds by investing in other assets • **Allowable** (depending on scheme's investment policy) but Trustees need to satisfy themselves of funding risks



Government bond yields	• Adopt the **AAA-rated euro area central government bonds yield curve** issued by the European Central Bank (ECB). • Implied single **Discount Rate** according to the duration of APF's liabilities: ➢ **1,15% p.a.**
Corporate bond yields	• Adopt the market yields of a **scheme-specific high-quality corporate bond liability proxy**. • Implied single **Discount Rate** derived from a basket of AA Eurozone Corporate bonds fit on the APF liability cash flow profile (as per the IAS19 Yield Curve approach): ➢ **1,82% p.a.**
Bond yields plus allowance for scheme assets to outperform bonds	• Adopt the yield on the corresponding assets held by the scheme and the future investment returns. • Implied single **Discount Rate** as a result of the implementation of the proposed long-term investment strategy: ➢ **2,90% p.a.**

The long-term investment strategy as outlined in the Statement of Investment Principles is broadly 75% income assets (10% cash, 40% local Government bonds, 15% investment-grade Eurozone Corporate bonds, 10% global Corporate bonds) and 25% growth assets (5% local equities, 15% global equities, 5% property). The long-term investment strategy of the Scheme has not been implemented yet.

At 31 December 2017, it has been calculated that, over the next 10 years, the Scheme's assets as per the long-term investment strategy have an expected return of 1,7% p.a. in excess of AAA-rated Eurozone government bond yields (i.e. 2,9% minus 1,2%) and the probability that they outperform these yields over this period is around 74%, as displayed on the following chart.



In assessing the level of prudence in the discount rate, it is useful for the

Trustees to consider the question "What is the probability of the Scheme's assets returning X% p.a. above the rate of increase in the Scheme's liabilities (assuming they increase in line with government bond yields)?"

Based on the Scheme's strategic asset allocation, Aon Hewitt's "Capital Market Assumptions" at 31 December 2017 and Aon Hewitt's projection methodology, we have assessed that the likelihood of the Scheme's assets returning at least 0,5%/1,0%/1,5% p.a. above the increase in the Scheme's liabilities is of the order of 68%/62%/54% over the next 10 years (as shown in the diagram below).

As at 31 December 2017, government bond yields were at relatively low levels. Most commentators (including ourselves) believe that in the medium term government bond yields will revert to higher, more "normal" levels. Because of this, the market already prices in an expected increase in such levels over the medium term which partly feeds through into the valuation assumptions through using the yields at the duration of the liabilities rather than at shorter terms.

However, our view is that yields will rise by more than the markets are pricing into medium-term government bond yields currently. So an argument could be put forward to increase the "government bond yields + [x]% discount rate" for this actuarial valuation.

Based on all of the above, we have set the discount rate by reference to the single "spot" yield on the AAA-rated euro area central government bonds yield curve at the duration of the liabilities (i.e. 21 years), plus a margin of 100bps to allow for future expected returns of the current investment strategy, leading to a discount rate assumption of **2,20% pa** (i.e. 1,2% + 1,0%).

Pension Increases

Increases are not applied on pensions in payment and pensions in deferment as per the Scheme rules.

We have thus used a pension increases assumption of **0,00% pa**.

Mortality

We have used a general mortality table called BVG2015 which is based on Swiss mortality (this is the new version of the EVK2000 life tables). We believe this table is a reasonable representation of expected mortality for Cypriot employees. The expected life for a male and female aged 65 under this table is 85,24 and 87,34 respectively.

Normal Retirement Age

- Immediate retirement for members who have completed 40 years of contributory service.
- Age 65 for members who have completed 35 years of contributory service.
- Age 70 otherwise.

Other Exits from Service

We have adopted a **nil** assumption for other pre-retirement exits (like disability, voluntary withdrawals, redundancy).

The table below summarises the assumptions adopted as at 31/12/2017:

Assumptions	**31/12/2017**
Discount Rate	2,20%
Pension Increases	0,00%
Mortality	BVG2015
Normal Retirement Age	Service -related
Other pre-retirement exits	None

Appendix 3: Risks relevant to Defined Benefit schemes

Investment Risk

In a defined benefit pension plan the scheme is exposed to **investment risk**. The impact of this risk is driven by:

- Extent to which the liabilities and assets are 'matched'
- Returns and volatility of the asset classes invested in

A relatively high level of cash exposure and unmatched strategy is likely to expose the Fund to significant levels of investment risk. Proper Asset-Liability Management and Implementation could reduce this risk.

Interest Rate Risk

In a defined benefit pension plan the scheme is exposed to **interest rate risk**. The impact of this risk is driven by changes in interest rates and to the level of matching between assets and liabilities. Interest rates impact both the accounting valuation and typically the funding valuation of a defined benefit plan.

As interest rates rise/fall, the valuation of the defined benefit pension liabilities will decrease/increase, unless offset by similar decreases/increases in the value of the assets.

Inflation Risk

In a defined benefit pension plan the scheme is exposed to **inflation risk**. The impact of this risk is driven by the annual level of inflation, changes to the long-term expectations for inflation rates and the level of matching between the assets and liabilities.

In general, annual levels of inflation drive on year-on-year increases in benefits payable and accrual/revaluation. Pension increases are linked to inflation, sometimes subject to a cap. Also, salary increases are directly influenced by the levels of inflation. The assumptions for both pension increases and salary increases are derived with reference to expected inflation.

The APF is not exposed to such risks, since the benefit is not linked to salary and no increases are granted to pensions.

Salary Increase Risk

In a defined benefit pension plan the scheme carries the **risk of high salary increases** in respect of the liabilities for active members.

Annual levels of salary increases drive year-on-year increases in benefit accrual under a final salary pension scheme. As expected long-term future salary increases rise, the valuation of the defined benefit pension liabilities will increase, unless offset by similar increases in assets.

The APF is not exposed to such risks, since the benefit is not linked to salary.

Risk of changes in funding regulations

In a defined benefit pension plan the scheme carries the risk that **funding regulations change**. Changes in funding regulations could impact the level of technical provisions and the levels/timing of contributions required.

Appendix 4: Glossary

Discount rate	This is used to place a **present value** on a future payment. A 'risk-free' **discount rate** is usually derived from the investment return achievable by investing in government gilt-edged stock. A **discount rate** higher than 'risk-free' rate is often used to allow for some of the extra investment return that is expected by investing in assets other than gilts.
Funding surplus/deficit	This is the value of assets less the funding target. If the funding target is greater than the value of assets, then the shortfall is called the **funding deficit**.
Funding ratio	This is the ratio of the value of assets to the **funding target.**
Funding target	An assessment of the present value of the benefits that will be paid from the scheme in the future, normally based on pensionable service prior to the valuation date.
Present value	Actuarial valuations involve projections of pay, pensions and other benefits into the future. To express the value of the projected benefits in terms of a cash amount at the valuation date, the projected amounts are discounted back to the valuation date by a **discount rate**. This value is known as the **present value**.
Projected unit method	This is one of the common methods used by actuaries to calculate a recommended contribution rate to the Fund. The method calculates the **present value** of the benefits expected to accrue to members over a period (often one year) following the valuation date. The **present value** is usually expressed as a percentage of the members' pensionable pay. It allows for projected future increases to pay through to retirement or date of leaving service. Provided that the distribution of members remains stable, with new members joining to take the place of older leavers, the contribution rate calculated can be expected to remain stable, if all the other assumptions are borne out. If there are no new members, however, the average age will increase and the cost of benefits accruing will rise.
Prudent	Prudent assumptions are assumptions that, if the Scheme continues on an ongoing basis, are more likely to overstate than understate the amount of money actually required to meet the cost of the benefits.
Recovery plan	Where a valuation shows a **funding shortfall** against the **technical provisions,** trustees must prepare a **recovery plan** setting out how they plan to meet the **statutory funding objective.**

Appendix 5: Responses on Peer Reviewer's Comments

Cronje & Yiannas Actuaries and Consultants Ltd has been engaged by the Advocates Pension Fund to undertake an independent peer review of the design review report prepared by AON. The main Peer Reviewer's findings and our comments are set out below.

We note the general comment that the Peer Reviewer has verified the general reasonableness of the calculations of our report. In relation to the detailed findings of the Peer Reviewer we outline our response below:

Base scenario **Combined pensioner and dependant liability**	**Peer Reviewer's comment:** *"Based on the calculations of the Independent Peer Reviewer, we would expect the combined pensioner and dependant liability to be c. 20% higher compared to the quoted amounts in the Author's report (€31.7m for pensioners and €6.9m for dependants). This deviation in the results would add approximately €8m of additional liability to the results presented in the Author's report and would therefore reduce the funding level on the central scenario to 22.9%."* **Author's response:** The Author is basing its calculations on 12 monthly pension instalments, whereas the Peer Reviewer has allowed 14 monthly pension instalments. This explains most of the Peer Reviewer's deviation in this calculation.
Base scenario **Liability for in-active members**	**Peer Reviewer's comment:** *"In addition to the above, based on the data provided we would expect the liability for in-active members to be c. 22% lower compared to the amounts in the Author's report. It is noted, however, that data for this category of members is limited and any assumptions made in the calculations (e.g. dates of birth) could materially impact the results. As such, significant variations between valuations are possible."* **Author's response:** As correctly noted by the Peer Reviewer, the data for this category of members is very limited. Thus, the results for this member category could be materially impacted by the assumptions and methodology adopted for the purposes of valuating the liability. However, any deviation in the result for this category arising from changes in assumptions/methodology would not alter the main conclusions and recommendations of our report.
Parametric Change scenarios **Combined pensioner and dependant liability**	**Peer Reviewer's comment:** *"For parametric change ("PC") 4, the combined liability for active and inactive members would be expected to be approximately 20% higher*

	considering the impact of the proposed reform under this scenario." **Author's response:** The Author is basing its calculations on 12 monthly pension instalments, whereas the Peer Reviewer has allowed 14 monthly pension instalments. This explains most of the Peer Reviewer's deviation in this calculation.
Parametric Change scenarios **Implied service cost**	It is not clear how the Peer Reviewer derives the implied service cost, so no comment can be made on this. However, we do not consider this to be of such significance to alter the main conclusions and recommendations of our report.
Parametric Change scenarios **Combined liability for active and inactive members**	**Peer Reviewer's comment:** *"For PC5, the combined liability for active and inactive members would be expected to be approximately 12% higher considering the impact of the proposed reform under this scenario."* **Author's response:** The Author is basing its calculations on 12 monthly pension instalments, whereas the Peer Reviewer has allowed 14 monthly pension instalments. This explains most of the Peer Reviewer's deviation in this calculation. Any residual deviation is not of such significance to alter the main conclusions and recommendations of our report.
Parametric Change scenarios **Employee contributions and stamps**	**Peer Reviewer's comment:** *"The employee contributions and stamps under PC4 and PC5 have changed compared to the projections in previous parametric scenarios. These contributions should remain unchanged as they are unaffected by the proposed parametric changes under PC4 and PC5."* *"The employee contributions and stamps under PC7 have changed compared to the projections in previous parametric scenarios. These contributions should remain unchanged as they are unaffected by the proposed parametric changes under PC7. The additional contributions set out under the Recovery Plan for the PC7 appear to be inconsistent with the contributions calculated under other scenarios."* **Author's response:** Under PC4, PC5 and PC7, the service period required by a member to be completed in order to be eligible for a full/unreduced benefit is higher compared to the other Parametric Change scenarios. Given (a) the above, (b) the fact that the Normal Retirement Age is set as the age at which an active member becomes eligible for full/unreduced benefit and (c) the assumption for new entrants such that the population is stable over the projection period, the number of active members in service is

comparatively higher under those three scenarios.

Since the amount of employee contributions is dependent on the number of active members (i.e. contributors), then a higher number of active members implies a higher total amount of employee contributions.

Mortality assumption

Peer Reviewer's comment:

"The mortality assumption proposed by the Author represents a very prudent assessment of mortality compared to the 2014 actuarial valuation of the Fund, the latest available social security study for Cyprus and, in particular, the Author's own assessment of expectations for the mortality of Cyprus employees as per the recent actuarial valuation report of the CYTA Pension Fund as at 31 December 2017 dated 21 June 2018 (source: www.cytapensionfund.org)."

Author's response:

We have used a general mortality table called BVG2015 which is based on Swiss mortality (this is the new version of the EVK2000 life tables). This table is based on the most recent study of mortality and demographic statistics in Switzerland and includes allowance for continuing future mortality improvements which is consistent with the requirements of the law.

Noting that there are no standard tables available for the Cypriot population, it is common to reference foreign mortality studies for funding valuations for Cypriot funds. It is important to highlight that in order to derive a reliable scheme-specific mortality assumption, a sufficient dataset of actual historic data is needed covering a population of at least several thousands.

We believe the BVG2015 table is a reasonable assumption for the scope of the work in this project. We note, that different assumptions and methodology may be adopted for other purposes (e.g. a cash equivalent conversion for transition to Defined Contribution). We

The mortality assumption adopted by the CYTA Pension Fund for the purposes of the actuarial funding valuation has been set by the Trustees of the CYTA Pension Fund as part of their overall funding basis and in line with their Statement of Funding principles. We do not believe that this is directly relevant to this study.

Parametric Change scenarios

Peer Reviewer's comment:

"The impact should be assessed on both the future and past service liabilities separately and may require different benefit reforms for past and future service."

Author's response:

We do not agree that this level of complexity is necessary. The range of

reforms presented is not exhaustive and further analysis can follow once a reform strategy is agreed by the Board.

Peer Reviewer's comment:

"Whilst the number of parametric change scenarios present a good range of reforms, it appears that none or very few of the scenarios would lead to a sustainable design for the Fund."

Author's response:

We do not agree with this conclusion. Our results indicate that there are a number of parametric reforms that can lead financial sustainability. We agree that the feasibility of such reforms should be carefully assessed. Further, we agree that once a reform strategy is agreed, further analyses can be provided including illustrations on the impact on different member categories.

Structural Reform scenarios

We agree with most of the Peer Reviewer's conclusions in this section.

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