



CRONJE & YIANNAS

ACTUARIES AND CONSULTANTS

Advocates Pension Fund

Peer review of Design Review Report as at 31 December 2017

26 July 2018

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1 Summary of Main Conclusions

Cronje & Yiannas Actuaries and Consultants Ltd (“C.Y Actuaries” or the “Independent Peer Reviewer”) has been engaged by the Advocates Pension Fund (the “Fund”) to undertake an independent peer review of the design review report prepared by AON Hewitt Cyprus (the “Author”) titled “Actuarial Valuation and Design Review Report as at 31 December 2017” and dated July 2018.

The Fund is currently considering the implementation of certain solutions that can address the issue of its long-term sustainability. To this extent, having performed the independent peer review of the report produced by the Author and provided to us by the Fund, we set out below our conclusions and recommendations.

Sustainability Review Key Questions

- A) The decision-making can be greatly assisted by addressing the key questions in a specific order. The key questions are:
- i. Is there scope to increase the current income from contributions and stamps and by how much?
 - ii. How is the income distributed between past service benefits for covering the deficit and future accrual of benefits for active members? For how long will the income be utilised to cover the past service deficit?
 - iii. What type of design will be used for the past service benefits? (“defined benefit”, “defined contribution” or a mixture of these two types).
 - iv. What type of design will need to be implemented for the future? (“defined benefit” or “defined contribution”).

The Author proposes a number of scenarios in the report with different possible answers to the above questions.

Reasonableness of Results

- B) In carrying out our review, we have observed certain inconsistencies in the results and suggest that these are investigated by the Author. These observations are noted in Section 3.2. It is recommended that these inconsistencies be addressed before further investigation into possible scenarios are performed.

Actuarial Valuation Results

- C) The actuarial funding valuation carried by the Author provides a view that the Fund is severely under-funded and unlikely to be sustainable in its current state over the long term. Notwithstanding the Independent Peer Reviewer’s comments on the results, we agree with the assessment that the Fund in its current form is unsustainable and note that further losses are incurred every month by paying benefits which the Fund cannot afford, and active members accruing promises which the Fund cannot deliver through the current level of income.

Before the Fund or Independent Reviewer can form a view of whether the funding assessment is reasonable, it is suggested that:

- A clear funding target should be established indicating the cost of benefits on a best estimate basis with an explicit margin for adverse experience given the potential for cross-generational subsidies to occur.
- Include the cost of holding “Regulatory Own Funds”.
- The results of the valuation should be extended to include the cost of one year of accrual and this should be separated when presented within the recovery plan contributions.
- The mortality assumption should be substantiated, given its significant financial impact.
- The Author should provide conclusions and recommendations to the Fund based on the valuation results.

Parametric Change Scenarios

- D) The impact of parametric changes should be assessed on both the future and past service liabilities separately, noting in particular that different benefit reforms may be required for past and future service.

In order to simply establish a range of possible reforms illustrated on the current valuation result of the Author, it should be noted that a reduction in past service benefits of 76% (if all beneficiaries are equally impacted) will be required to bring the Fund to 100% funding. Similarly, future benefits should be reduced by 53%, for the existing income of the Fund to cover the cost of future benefits (with all income allocated to future accrual).

- It is noted that, any parametric changes will perpetuate the defined benefit nature of the Fund. As such, the uncertainty over the future affordability of benefits will remain, exposing the Fund to defined benefit pension specific risks (longevity, investment, inflation etc.).
- For any parametric change to be selected, it will be important to ensure that the income of the Fund exceeds the cost of future accrual so that new deficits are not created in the future.
- In the case of parametric changes, and the absence of a guarantor for the Fund’s benefit promises, it will be critical to introduce a “zero-deficit” clause providing a method and basis for benefit adjustments based on the funding level. It will be challenging to sustain the Fund in its defined benefit form without such a mechanism in place.
- Given the existing level of income and underfunding, it is clear that significant benefit cuts will be required to achieve any level of sustainability for both the past and future service benefits. Importantly, any potential for increasing the income to the Fund would be a critical consideration to the decisions taken.
- It will also be important to assess the level of fairness that each method provides to the different categories and generations of members and the objectives of the Administrative Committee in addressing these.

Structural Reform Scenarios

- E) Considering the current funding position of the Fund, it is clear that any parametric reform will result in significant benefit reductions. Given this, and the potential inability to rectify future deficits as and when they arise (e.g. through a substantial increase in contribution income), we consider that converting the Fund to a defined contribution arrangement or dissolving the Fund and starting a new defined contribution fund could be in the best interest for the majority of the Fund’s beneficiaries.

In light of this recommendation, the proposed structural reforms should be assessed against:

- The perceived fairness of each method and whether a desire exists to treat a particular group of beneficiaries with particular care.
- The challenges involved in the distribution of stamps to two Funds running in parallel (DB and DC) but also the challenges in distributing the income from stamps to members within a single DC Fund.
- The relative simplicity in implementing and communicating the selected reform.
- The cost of implementation and the timelines over which such a reform could be feasibly completed.
- The potential pay-outs to the different categories of members and the likely success of having such a reform accepted by members and legislation amended to accommodate it.
- The legal merits of each proposal within the Rules of the Fund and applicable legislation/regulations (as well as the impact of possible litigation against the Fund from its members).
- The urgency of the matter given that the Administrative Committee has not yet taken any actions since the problem was identified (e.g. by suspending all benefit payments). We highlight that for every month which passes by without any action, there is a reduction in the security of members' benefits.

Signed On behalf of Cronje & Yiannas Actuaries and Consultants Ltd



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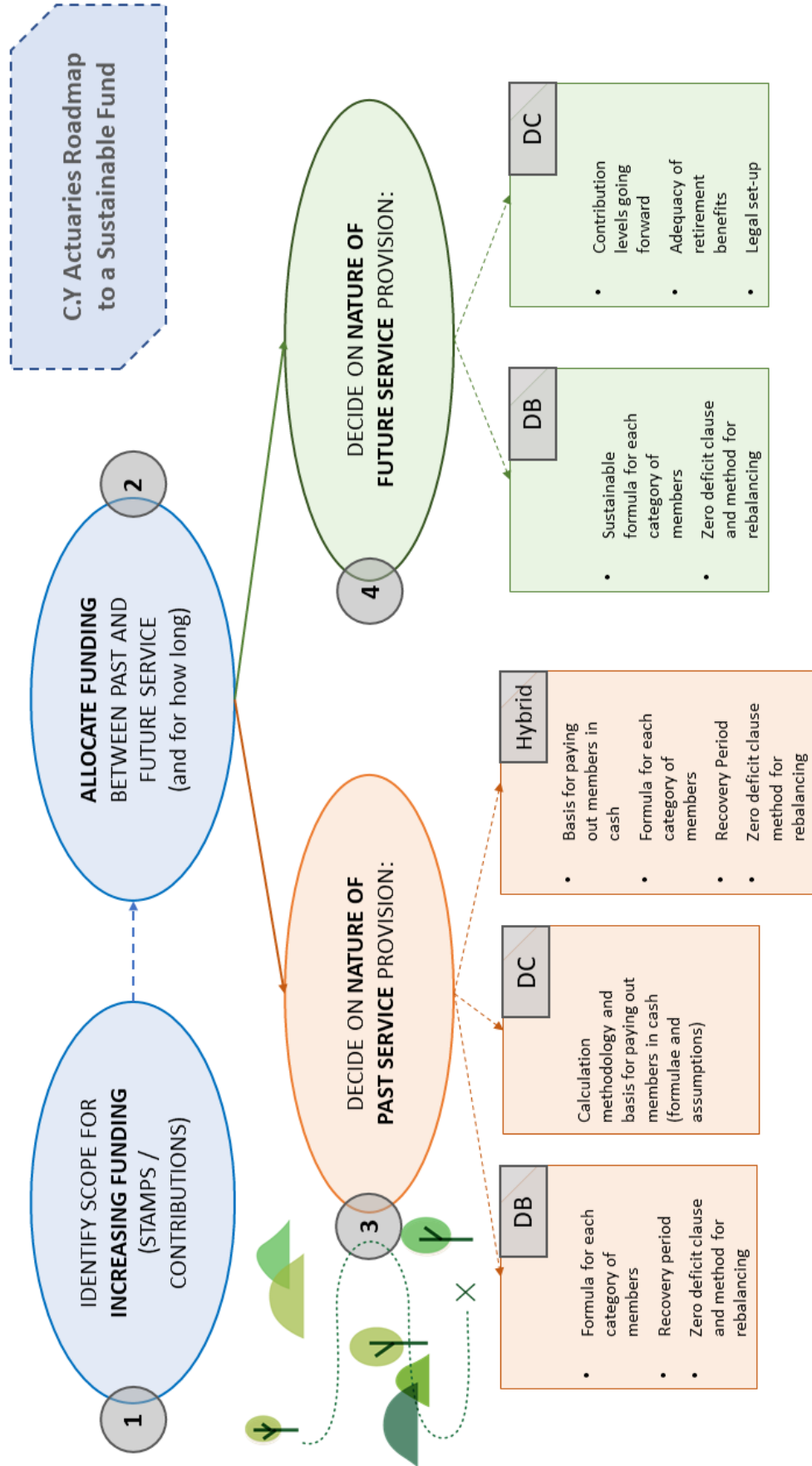
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Roadmap to a Sustainable Fund



2 Introduction

2.1 Introduction

Cronje & Yiannas Actuaries and Consultants Ltd (“C.Y Actuaries” or the “Independent Peer Reviewer”) has been engaged by the Advocates Pension Fund (the “Fund”) to undertake an independent peer review of the design review report prepared by AON Hewitt Cyprus (the “Author”) titled “Actuarial Valuation and Design Review Report as at 31 December 2017” and dated July 2018. The scope of the design report is stated by the Author as:

“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.”

This report sets out the findings of the Independent Peer Reviewer within the scope of the peer review as set out in paragraph 2.2 below.

2.2 Scope of the Peer Review

The scope of the Peer Review includes the following actions:

- i. Verification of the general reasonableness of the results presented by the Author
- ii. Review of the actuarial valuation methodology and assumptions adopted by the Author in preparing the results
- iii. Review of the reform scenarios modelled
- iv. General observations

2.3 Guidance and Limitations

This report has been prepared by three fully-regulated Fellows of the Institute and Faculty of Actuaries in the United Kingdom and, as such, was prepared in accordance and with due consideration of the Guidance published by the Institute “**APS X2: Review of Actuarial Work**”.

This report is intended for the sole reference of the Administrative Committee of the Fund, the Author and the Pensions Regulator of Cyprus. A reader should consider this report in the light of the purpose for which it was written and the applicable requirements. The underlying work applied general actuarial principles. Another actuary may have come to materially different but reasonable conclusions based on a different set of assumptions, methods or funding targets.

The calculations and conclusions have been based on the data and details provided by the Administrative Committee and Scheme Administrator as at 31 December 2017. Subsequent events have not been taken into account. We have carried out reasonableness checks to assess the general accuracy of the data and have no reason to doubt the substantial accuracy of the data and therefore the results and conclusions presented in this report. It should be noted that we have relied on the completeness and accuracy of the data provided by the Fund. A list of the data provided is set out in the Appendix to this report.

This document should be considered in its entirety, as parts taken out of context may be misleading. Any third parties reading this report may not have the background information necessary for a full understanding of the report.

3 Reasonableness of the Results

3.1 Introduction

In this section we set out our observations regarding the reasonableness of the calculations presented by the Author. The Independent Peer Reviewer has received the same data set as the Author, as set out in the Appendix, and carried out its own calculations to verify the general reasonableness of the calculations presented by the Author.

This section of the review is limited to the verification of the calculations and not the methodologies, assumptions, scenarios presented or advice or conclusions provided.

3.2 Detailed Findings

Based on the data provided, the Independent Reviewer has carried out its own independent calculations to verify the general reasonableness of the results and amounts presented in the Author's report.

The comments and findings of this analysis, on the central scenario showing a funding level of 23.6%, are set out below:

Base Scenario

- 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%.
- In addition to the above, based on the data provided we would expect the liability for inactive 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.
- The recovery plan contributions set out on page 19 of the Author's report cover a period of 14 years and not 15 years as stated.

Parametric Change Scenarios

- Throughout the report the recovery plan duration is noted to be 15 years although the tables setting out the recovery plan are based on a duration of 14 years.
- 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.

- The implied service cost under PC4 of €9.1m in year 1 exceeds the implied service cost under PC2 (€9.0m). The service cost under PC4 is expected to be lower considering the reduced accrual of future benefits.
- The implied service cost under PC5 of €11.2m in year 1 exceeds the implied service cost under PC2 (€9.0m). The service cost under PC5 is expected to be lower considering the reduced accrual of future benefits.
- 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.
- 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.
- The implied service cost under PC7 of €6.4m in year 1 exceeds the implied service cost under PC6 (€5.1m). The service cost under PC7 is expected to be lower considering the additional reductions in benefits compared to PC6.

3.3 Conclusions

The Independent Peer Reviewer, with the exception of the detailed findings above, has verified the general reasonableness of the calculations of the Author.

4 Review of the Methodology and Assumptions

4.1 Introduction

In this section we set out our observations regarding the actuarial valuation methodology and assumptions adopted by the Author in preparing the results as set out in Section 4 of the Author's report.

4.2 Principles and Purpose of Funding

The principles and the purpose of funding are critical in setting an appropriate funding objective and target, clearly stating how the Fund intends to meet its obligations over time. The principles and purpose of the funding in the Author's report describes this in the context of an occupational pension scheme with a sponsoring employer. Two examples are:

“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.”

“Principles of Funding – The Trustees and Company are required to agree on three principles”

One of the main considerations in assessing the financial position of the Fund is the fact that the Fund operates within the following framework:

- The Fund is a social fund with its membership based on the mandatory industry-wide participation of persons who are registered with the Cyprus Bar Association, and therefore is exclusive to lawyers employed and operating under the licences issued by the Association. The mandatory nature of the membership of people in the profession ensures continued and substantial size of the membership for the Fund, but may not exhibit stability over time (as the profession grows or contracts). The size provides some basis for potential risk-sharing amongst members.
- There is no sponsoring employer(s) or guarantor, so the Fund has no recourse for additional funds with the exception of member contributions and stamps (“Δικηγορόσημα”). As such, any adjustment in contributions or benefits in the future to restore any funding deficit or reduce a funding surplus will have the effect of a cross-subsidy between different categories and generations of members. Sustainability of the benefit design, stability in the funding level and contribution rates are key factors in maintaining equity across the membership and yields special challenges for constructing recovery plans.
- The assumption is that the Fund can, from time to time, enact parametric changes to the benefits for all categories of members to ensure the ongoing sustainability. In the absence of this assumption, the longer term sustainability of the Fund will always remain in the balance with potentially massive cross-generational subsidies, with greater risks for younger generations of members in terms of a reduction in benefits. Any clause providing the ability to adjust the benefits depending on the funding level is termed “zero-deficit” clause, and is fundamental to the operation of a defined benefit style fund without a sponsor.
- The Fund operates under the requirements of Law 208(I) 2012, as noted by the Author.

- The Author notes the potential requirement to hold “Regulatory Own Funds” as per Article 35 of the Law. If the analysis is that this reserve may have to apply, it would be in the interest of the Fund to consider the impact of this reserve on the results as it directly influences the sustainability of the Fund and thus the decision on any parametric or structural changes. As an illustration, a requirement to hold 4% additional Regulatory Own Funds, would lead to an increase in liabilities under the base scenario of €11.4m.

4.3 Funding Target

Based on the funding principles and purpose, a funding target should be clearly defined. The Author does not explicitly propose a funding target, but notes that the funding target is based on the technical provisions calculated on certain assumptions, i.e. to meet the benefit payments when they fall due on a prudent basis (as per the legislation). In addition, the proposed funding target assumes a certain level of investment risk that is assumed to achieve some investment outperformance over and above the “risk-free rate”.

The Independent Peer Reviewer would propose a defined funding target considering:

- Accumulating sufficient assets to meet the benefits of the Fund based on the existing rules (“best estimate”).
- Accumulating an additional and explicit margin over the best estimate, to allow for future adverse deviation from the assumptions. It is recognised that accumulating any margins over the longer term should lead to a cross-generational subsidy in that future members may be benefiting from the experience being better than assumed. As such, to give clarity to this point and the decision-making any margins for prudence should explicitly be quantified.
- The Fund should recognise that when assuming investment risk (and as proposed 100 bps over the “risk-free rate”) any impact of adverse investment experience will be borne by the future or current members either through additional contributions or reduction in benefits (to the extent possible).

4.4 Actuarial Valuation Methodology

The Author notes that the Projected Unit Method (“PUM”) is used to calculate the technical provisions. This method is commonly used by actuaries for funding valuations for schemes open to new members. The method considers the cost of past service separate from the cost of future service benefits.

The Independent Peer Reviewer is agreement that the PUM is appropriate for the assessment of the funding position for the actuarial valuation. However, when considering scenarios concerning the closure of the Fund to new members, this method may not be appropriate and a method such as the Attained Age method is more suitable for the assessment.

4.5 Assumptions

There are two important valuation assumptions that drive the results, namely the discount rate and the mortality rate.

Discount Rate

The proposed discount rate of 2.20% per year represents a margin of 100 basis points over AAA-rated EU government bonds (1.15% per year) of a similar duration to the liabilities of 21 years as stated by the Author. This margin is based on the current Statement of Investment Principles (“SIP”) with the following asset allocation per asset class (compared to the actual investment holdings of the Fund at the valuation date):

	Statement of Investment Principles	Approximate Asset Allocation as at 31 December 2017
Local Government Bonds	40%	3.6%
Investment Grade Eurozone Corporate Bonds	15%	0.2%
Global Equities	15%	1.2%
Global Corporate Bonds	10%	0.9%
Cash	10%	81.6%
Local Equities	5%	0.2%
Local Property	5%	10.9%
Global Bonds (Other)	Not specified	1.5%

**The asset allocation as at 31 December 2017 is provided based on approximate look-through on data available.*

As noted by the Author, the investment strategy has not been implemented yet, and based on the current asset allocation the expected return of the Fund would be substantially lower. It is further stated that the 2.20% p.a. return is expected to realise over the next 10 years with a probability of 62% which is therefore better than best estimate. The best estimate return is stated as 2.90% per year. The Independent Peer Reviewer views the expected returns as reasonable in the context of the SIP.

The above method for selecting a discount rate is fairly common in pension fund valuations and the discount rate is viewed as reasonable. Given the special nature of the Fund, the Independent Peer Reviewer believes that an illustration based on the current actual asset allocation should be provided to inform the Fund of the longer term consequences if the status quo investment position is maintained, or if the Fund invests fully in AAA-rated EU government bonds as the “least risk” strategy.

Mortality Rate

The Author has adopted the BVG 2015 mortality table and states that this assumption is believed to be a reasonable estimate of the expected mortality for Cypriot employees (i.e. best estimate). 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. In the case of the Fund,

having several thousand members, the mortality assumption should be verified against actual historical mortality experience from the Fund.

Below is a comparison of the life expectancy now and in 20 years for a 65-year old male and female on a number of mortality assumptions used in Cyprus for valuation purposes:

Mortality 2017 – Remaining life expectancy for a 65 year old in years					
	BVG 2015 Proposed by the Author as at 31/12/2017	CYTA Pension Fund Valuation 31/12/2017	90% of EVK2000	2014 Actuarial Valuation of the Fund	Social Security Study in 2015*
Male	20.2	18.9	18.4	16.5	18.6
Female	22.3	21.7	21.1	20.3	21.0
Mortality 2037 – Remaining life expectancy for a 65 year old in years					
	BVG 2015 Proposed by the Author as at 31/12/2017	CYTA Pension Fund Valuation 31/12/2017	90% of EVK2000	2014 Actuarial Valuation of the Fund	Social Security Study in 2015*
Male	23.2	18.9	18.4	16.5	20.4
Female	24.9	21.7	21.1	20.3	22.9

**Estimated from the Actuarial valuation of the General Social Insurance Scheme as of 31 December 2014 by the Public Finance, Actuarial and Statistics Services Branch (SOC/PFACTS) Social Protection Department International Labour Office, Geneva*

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).

The choice of the mortality assumption impacts the assessment of the liability by up to 40% and can lead to a massive deviation in the funding result. As such, the Independent Peer Reviewer believes that the Author should:

- i. Substantiate the choice of mortality assumption.
- ii. Explain the deviation from the Author's own view stated in the CYTA Pension Fund valuation.
- iii. Test this against the actual mortality experience from the Fund.
- iv. Add a sensitivity scenario using an alternative mortality assumption to illustrate the impact of the choice of the mortality assumption.

4.6 Results of the Funding Valuation

The results of the funding valuation present the past service liabilities of the Fund clearly and for each main category of membership.

The Independent Peer Reviewer notes that the cost of future accrual is not specified in the results. This measure is critical for the assessment of the adequacy of the current revenue of the Fund to support the current benefit formulae. It is suggested that this analysis of the cost of accrual is added along with the relevant sensitivity scenarios.

In addition, it would be useful to separate the revenue from contributions and from stamps, since this will aid the assessment of equity between categories of members. The separation of contributions is also desired due to the assumption for future increases in contributions being different for member contributions (0% per annum) and stamps (2% per annum).

4.7 Recovery Plan

It is stated that any funding deficit or surplus should be eliminated over an agreed period of time, often the future working life of the active members. In the experience of the Independent Peer Reviewer, the (typical) maximum period for a recovery plan typically approved by the Pensions Regulator in Cyprus is 10 to 15 years, and hence the period chosen is on the higher end of our expectations for a recovery plan to be agreed by the Regulator.

It is noted that whilst the valuation is carried out on a discount rate of 2.2% per year which is considered prudent by the Author, the recovery plan is calculated using a best estimate rate of 2.9% per year. The rationale for this inconsistency is not clear to the Independent Peer Reviewer from the report submitted.

It should be noted that based on a recovery plan of 15 years, the Author calculates the extra deficit contributions to be €23.4m per year. Comparing this amount to the total existing revenue of the fund of €6.3m per year suggests that the Fund is not sustainable, but this should be assessed in the context of the cost of accrual and the access to additional revenue from either contributions or stamps.

4.8 Vesting of benefits

It is noted that the current rules of the Fund follow strict vesting rules whereby no benefit is granted to members unless they have a minimum of 25 years of service. As per the requirements of legislation, a maximum 4-year vesting period can be applied as noted by the Author and allowed for in their calculations. This is in agreement with our views for the calculation of the technical provisions of the Fund.

4.9 Conclusions

The actuarial funding valuation carried by the Author provides the Fund with a view that the Fund is severely under-funded and unlikely to be sustainable in its current state over the long term. Before the Fund or Independent Reviewer can form a view of whether the funding assessment is reasonable, it is suggested that:

- 1) Key principles around funding should be defined and the potential impact of the requirement to hold Regulatory Own Funds should be assessed.
- 2) A clear funding target should be established indicating the cost of benefits on a best estimate basis with an explicit margin for adverse experience given the potential for cross-generational subsidies to occur.
- 3) The mortality assumption should be substantiated further given the significant financial impact.
- 4) The results of the valuation should be extended to include the cost of one year of accrual.
- 5) The sensitivity of the results to the assumptions chosen should be demonstrated through a sensitivity analysis, particularly for the discount rate implied by the current asset allocation of the Fund and alternative mortality assumptions. The sensitivity of results to inflation should also be demonstrate as this affects the contributions from stamps into the Fund.
- 6) Conclusions and recommendations are provided to the Administrative Committee of the Fund based on the valuation results.

5 Review of the Parametric Change Reform Scenarios

5.1 Introduction

In this section the Independent Peer Reviewer sets out our review of the parametric reform scenarios modelled by the Author as set out in Section 5 of the Author's report. It is noted that both parametric and structural reform scenarios are considered which provides an holistic overview of the reform options for the Fund.

In respect of parametric changes, it should be noted that:

- 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. There are two different questions to be addressed:
 - o How should the past service liability be met - through a benefit reduction or contributions from members or stamps or both?
 - o How should future benefits be funded to avoid putting a strain on the future finances of Fund and avoid cross subsidies between different categories and generations of members?
- Parametric changes will perpetuate the defined benefit nature of the Fund. As such, the uncertainty over the future affordability of benefits will remain. It is critical to introduce a "zero-deficit" clause providing a method and basis for benefit adjustments based on the funding level.
- Given the existing level of income, significant benefit cuts will be required to achieve any level of sustainability for both the past and future service benefits. In particular, any potential for increasing the income to the Fund would be a critical consideration to the decisions taken for parametric or structural changes.

5.2 Presentation of Reform Scenarios

In respect of each reform scenario, the Administration Committee would need to assess the shorter and longer term financial position of the Fund, as well as the impact on each class / type of beneficiary. The Independent Peer Reviewer believes that for every reform scenario the following should be illustrated:

- i. The impact on the cost of future accrual. This is critical in illustrating the future cost of the benefits compared to the contribution income from the Fund and the longer term sustainability of the benefit design.
- ii. Limiting the projection period to 15 (14) years is not sufficient to illustrate the longer term sustainability of the Fund. The projection period should be extended or a longer term metric provided (e.g. projected funding level in 40 years).
- iii. Impact on the benefits of each category of beneficiary. Some of the parametric reform scenarios impact different categories of members differently, and it is important for the

Fund to evaluate or appreciate the equity between different categories of members for each reform.

- iv. Nominal impact on illustrative members for each category of beneficiary. It would assist the understanding of the Fund to illustrate the nominal benefit impact on a sample member for each category / type of beneficiary.
- v. It would be helpful to understand the recommendation from the Author for each scenario along with the advantages and disadvantages.

5.3 Parametric Reform Scenarios

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. In addition, many of the scenarios do not impact current pensions in payment, leaving active members with the burden of both increased contributions and a reduction in benefits.

It should be considered to reduce the number of parametric change scenarios to only the scenarios that could be considered feasible in the longer term (these may be a combination of reforms) and equitable between different categories of members. This should be constructed with a view to the maximum reasonable contributions that realistically could be available to the Fund.

We have considered the impact on the benefits on different categories of members for the parametric reforms proposed by the Author, and set out below statistics to illustrate the impact of the changes.

Parametric Changes 1 & 2

PC 1 Description: Removal of 60% uplift on pension for current and future beneficiaries.

PC 2 Description: Removal of 60% uplift on pension only for future beneficiaries.

Overview

Under the two illustrative reforms, the Author proposes the removal of the 60% uplift in pensions for all members (under PC1) and only for future beneficiaries (under PC2).

The difference between the two reforms is the treatment of current and future beneficiaries. In particular, PC1 applies equal treatment across all categories of beneficiaries. Conversely, PC2 leaves the current beneficiaries unaffected. This is a category of members that is already in receipt of a pension from the Fund and has little time and ability to make other financial plans for income in retirement. However, consideration should be given to a potentially large proportion of current beneficiaries who have received unreduced pension benefits which were well in excess of their contributions into the Fund and above sustainable levels, placing the burden of the cost on future beneficiaries. It is noted that PC1 is the only reform proposed which affects the current beneficiaries.

The cost of future accrual of benefits under the two proposed reforms is reduced from €13.5m to €8.9m. Noting that the current income from contributions and stamps stands at €6.3m, notwithstanding future inflation increases in stamps, the proposed design is promising benefits whose value outweighs the income of the Fund and will, at least in the short-term, create additional deficits.

Impact of proposed reforms on benefits

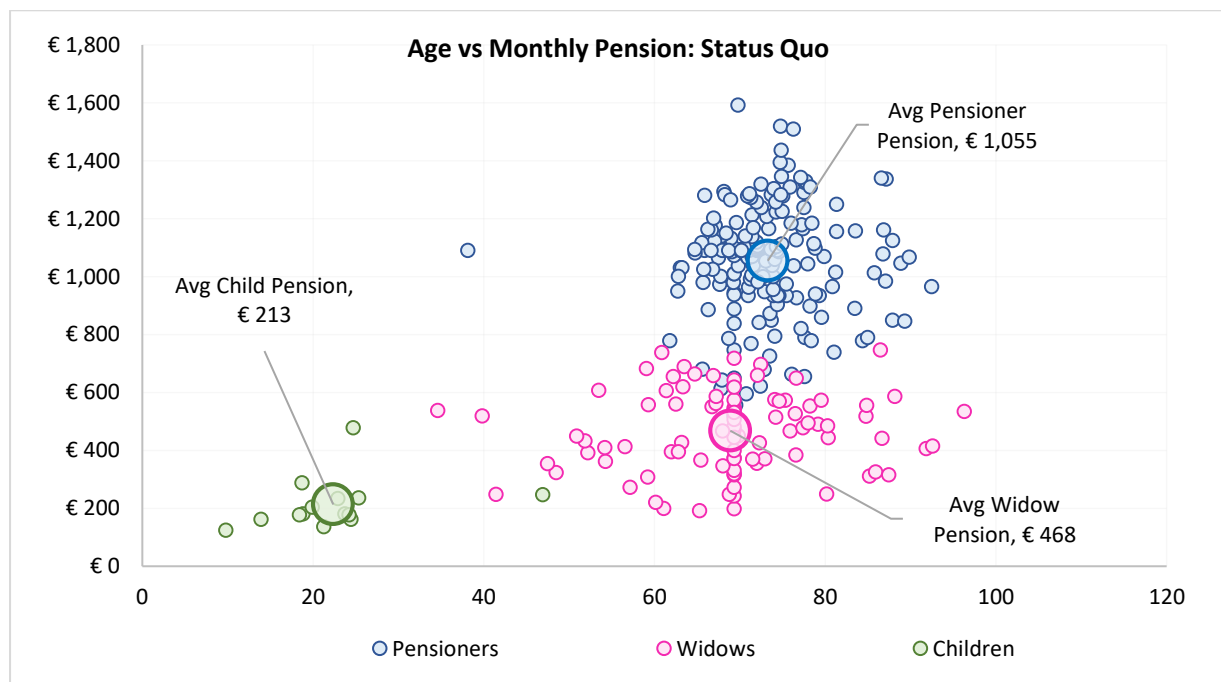
The proposed changes will result in a reduction of 37.5% to the current level of pensions. The lump sum benefits under these changes are unaffected.

Future beneficiaries: For future beneficiaries, with a career of 40 years the proposed changes will have the following effect:

Benefits	Status quo	PC1 & PC2	Reduction in €
Pension after 40 years of service	€1,247	€779	€468
Lump sum after 40 years of service	€24,000	€24,000	-

Current beneficiaries: For pensioners, widows and children, the impact of the reduction in benefits under PC1 is demonstrated below:

Average Monthly Pension	Status quo	PC1	Reduction in €
Pensioners	€1,055	€659	€396
Widows	€468	€293	€176
Children	€213	€133	€80



Parametric Change 3

PC 3 Description: Removal of 60% uplift on pension only for future beneficiaries and increase in early retirement reduction factors.

Overview

Under this scenario, the early retirement factors applying to the pension benefits are doubled from 6% to 12% per year for each year that the pension is taken early. This change would only affect the members that elect to retire before the normal retirement age and would also depend on the number of years that members retire early. Current beneficiaries remain unaffected.

The proposed reform could be seen to be favouring current beneficiaries as they remain unaffected by the changes, whereas future beneficiaries have their accrued benefits reduced and will also accrue benefits at a lower rate in the future.

In terms of the cost of future accrual, this is reduced to €8.7m, and similarly to PC1 and PC2, it exceeds the total income of the Fund and is therefore unsustainable.

Parametric Changes 4 & 5

PC 4 Description: Removal of 60% uplift and change in the accrual factor from 1/480 to 1/540 which also results in a change in normal retirement age eligibility rules.

PC 5 Description: Removal of 60% uplift and change in the accrual factor from 1/480 to 1/504 which also results in a change in normal retirement age eligibility rules.

Overview

Under these scenarios, the Author expands from PC2 with the removal of the 60% uplift for future beneficiaries and proposes a change in the accrual factor so that the current level of pension takes longer to accrue and the retirement age eligibility requirements become more stringent.

Therefore, these changes result in a smaller pension amount at retirement with the pension paid for a reduced amount of time due to increased retirement ages (on average), effectively reducing the value of the benefits.

The proposed reform could be seen to be favouring current beneficiaries as they remain unaffected by the changes, whereas future beneficiaries have their accrued benefits reduced, their retirement ages increased (on average), and will also accrue benefits at a lower rate in the future.

The implied cost of future accrual under the proposed reforms (PC4 and PC5) exceeds the total income of the Fund and is therefore unsustainable, as benefit accrual exceeding the income of the Fund will increase the deficit.

Impact of proposed reforms on benefits

Future beneficiaries: For future beneficiaries, with a career of 40 years the proposed changes will have the following effect, allowing for the appropriate reductions in pension to compare the resulting pensions at a retirement age of 65 years:

Benefits	Status quo	PC4	Reduction in €
Pension after 40 years of service	€1,247	€485	€762
Lump sum after 40 years of service	€24,000	€24,000	-

Benefits	Status quo	PC5	Reduction in €
Pension after 40 years of service	€1,247	€653	€594
Lump sum after 40 years of service	€24,000	€24,000	-

The illustrations provided above are based on 40 years of service and assume retirement at 65 years of age with the applicable early retirement reductions of 30% for PC4 and 12% for PC5. It is noted that under PC4 and PC5, retirement age eligibility requirements have been increased by 5 years and 2 years respectively, for an unreduced pension.

Parametric Change 6

PC 6 Description: Removal of 60% uplift on pension and reduction of benefits by a further 50% only for future beneficiaries.

Overview

Under this scenario, the Author expands from PC2 with the removal of the 60% uplift for future beneficiaries and proposes an additional reduction to the pension benefits of 50%, without any change in the accrual factors and retirement age eligibility rules.

The proposed reform could be seen to be favouring current beneficiaries as they remain unaffected by the changes, whereas future beneficiaries have their accrued benefits reduced and will also accrue benefits at a lower rate in the future.

The implied cost of future accrual under the proposed reform of €5.1m is lower than the total income of the Fund and could therefore be seen as sustainable in respect of future benefits. We note that this relationship is likely to yield surpluses in the future, considering that the income of the Fund will exceed the cost of accrual and assuming that assumptions are borne out in practice.

Impact of proposed reforms on benefits

Benefits	Status quo	PC6	Reduction in €
Pension after 40 years of service	€1,247	€390	€857
Lump sum after 40 years of service	€24,000	€24,000	-

Parametric Change 7

PC 7 Description: Removal of 60% uplift on pension, reduction of benefits by a further 50%, change in the accrual factor from 1/480 to 1/504, change in normal retirement age eligibility rules and increase in early retirement reduction factors – only affects future beneficiaries.

Overview

Under this scenario, the Author proposes a combination of parametric changes illustrated in previous scenarios. Specifically, this scenario combines the removal of the 60% uplift, change in the accrual factor to the proposal under PC5 and the resulting changes in retirement age eligibility rules, doubling of early retirement factors, and a 50% reduction in pension benefits.

Current beneficiaries are unaffected under this scenario and, as noted previously, this might be seen as unfavourable to future beneficiaries.

Additionally, the implied cost of future accrual under of €6.4m is lower than total projected income and could therefore be seen as sustainable. We note that this relationship is likely to create surpluses in the future as noted under the previous proposed reform.

Impact of proposed reforms on benefits

Benefits	Status quo	PC7	Reduction in €
Pension after 40 years of service	€1,247	€282	€965
Lump sum after 40 years of service	€24,000	€24,000	-

5.4 Additional Parametric Scenarios

Whilst the number of parametric change scenarios present a good range of reforms, there are a number of scenarios which could be investigated that would be helpful to the understanding of the future of the Fund.

Noting that none or very few of the scenarios presented by the Author would lead to any kind of sustainability in design for the Fund, it would be beneficial to investigate the following three scenarios simply to establish a range for restoring or maintaining funding levels:

- A) Find the x% reduction in the benefits for future beneficiaries that would balance the income of the Fund (member contributions and stamps) with the cost of future accrual of benefits in order to mitigate the risk of future deficits.

It is noted that balancing the relationship between the income of the Fund and the cost of future accrual means that all the income is utilised for covering the cost of future accrual and is not diverted for the reduction in the current deficit. Therefore, this scenario does not address the past service deficit currently present in the Fund.

- B) Illustrate the reduction in benefits for all beneficiaries that would balance the liabilities and assets of the Fund as at the valuation date. This would imply reducing the current level of benefits according to the funding level of 23.6% (e.g. 76.4% reduction).

Following this reduction, future beneficiaries could theoretically continue to accrue benefits at a reduced rate as described in Scenario A above.

The operation of the Fund on this basis would require the application of a zero deficit clause that could reduce future deficits as and when they arise. Additionally, the margin for adverse deviation to be included over and above the cost of accrual could be used to provide enhanced benefits to beneficiaries in the future, should surpluses arise that allow such benefit enhancements.

- C) Illustrate the reduction in benefits for future beneficiaries (leaving current beneficiaries unaffected) that would balance the liabilities and assets of the Fund as at the valuation date. This would imply reducing the current level of benefits according to the funding level of 11.6% (e.g. 88.4% reduction).

Future beneficiaries can continue to accrue benefits as described under Scenario B above.

We would like to stress that any combination of parametric changes that ensures that the income of Fund exceeds the cost of future accrual could potentially create surpluses in the Fund, if assumptions about future experience are borne out in practice.

Additionally, **the scenarios set out in this section are only indicative** and are presented with the intention of illustrating the extent to which benefits would need to be reduced at the valuation date in order to balance the liabilities of the Fund with its assets while also ensuring that the cost of future accrual is covered by the income from member contributions and stamps.

Scenario A

Overview

The implied service cost from the Author's report is estimated to be around €13.5m per annum. This amount represents the cost of 1 year's accrual of benefits for the current beneficiaries. The level of annual member contributions and stamps into the Fund during the year 2017 was €6.3m.

It is evident that the current income of the Fund cannot sustain the cost of future benefit accrual at current levels. In order to avoid the increase in the current deficit, the cost of future accrual should balance with the income of the Fund.

Assuming that the income of the Fund remains stable, this would imply an approximate reduction of at least 53.3% to the benefits for future beneficiaries. It is noted however that the precise reduction of benefits by this percentage would not deal with current deficit because all the income of the Fund would be diverted to cover the cost of future accrual of benefits. As such, the past service deficit would need to be rectified using additional contributions (or future surpluses) which may not be available to the Fund.

It is noted that, if the income of the Fund consistently exceeds the future cost of accrual, the difference would go towards reducing the past service deficit of the Fund and could possibly result in surpluses in the future.

Impact of proposed reforms on benefits

The current scenario would result in a reduction of 53.3% to the retirement benefits of future beneficiaries. Current beneficiaries are unaffected under this scenario.

Future beneficiaries: For future beneficiaries, with a career of 40 years the proposed changes will have the following effect:

Benefits	Status quo	Scenario B	Reduction in €
Pension after 40 years of service	€1,247	€582	€665
Lump sum after 40 years of service	€24,000	€11,208	€12,792

Scenario B

Overview

Based on the results of the Author's report, the funding level of the Fund as at the valuation date was 23.6%. Illustratively, in order to bring the funding level of the Fund to 100%, a reduction of benefits of 76.4% would be required as at the valuation date.

Impact of proposed reforms on benefits

The proposed changes will result in a reduction of 76.4% to the retirement benefits of all beneficiaries.

Future beneficiaries: For future beneficiaries, with a career of 40 years the proposed changes will have the following effect:

Benefits	Status quo	Scenario B	Reduction in €
Pension after 40 years of service	€1,247	€294	€953
Lump sum after 40 years of service	€24,000	€5,664	€18,336

Current beneficiaries: For pensioners, widows and children, the impact of the reduction in benefits under PC1 is demonstrated below:

Average Monthly Pension	Status quo	Scenario B	Reduction in €
Pensioners	€1,055	€249	€806
Widows	€468	€110	€358
Children	€213	€50	€163

Scenario C

Overview

Similarly to Scenario B, but leaving the benefits of current beneficiaries unaffected, the resulting reduction to the benefits of future beneficiaries that would be required to balance the Fund as at the valuation date is approximately 88.4%.

Impact of proposed reforms on benefits

The proposed changes will result in a reduction of 88.4% to the retirement benefits of future beneficiaries.

Future beneficiaries: For future beneficiaries, with a career of 40 years the proposed changes will have the following effect:

Benefits	Status quo	Scenario C	Reduction in €
Pension after 40 years of service	€1,247	€145	€1,102
Lump sum after 40 years of service	€24,000	€2,786	€21,216

Future Accrual of Benefits

It is evident that the application of reductions discussed under Scenario B and C would bring the Fund to a funding level of 100% at the valuation date.

However, these reductions would also imply that the accrual of benefits for future service is reduced substantially. As a result, the income received from contributions and stamps would potentially exceed the cost of accrual and eventually result in surpluses in the Fund.

A solution to this in-balance could come in the form of a combination of reforms for past and future service. For example, Scenarios B or C could be implemented to bring the funding level of the Fund to 100% by reducing benefits accrued up to the valuation date by the required percentages. The income from contributions and stamps could then be used to finance higher accrual for active members for future service.

Such a combination would result in the recovery of the funding level to 100% and a balance between the accrual of future benefits and the income of the Fund. However, it is noted that even with the implementation of such reforms, the sustainability of the Fund cannot be guaranteed in the absence of a guarantor that can rectify deficits as and when they arise, or the existence of a mechanism for automatically increasing the contribution income, or the application of zero-clause deficit that would reduce the benefits to bring the Fund into balance every time a deficit is created.

5.5 Conclusions

Any parametric changes will perpetuate the defined benefit nature of the Fund. As such, the uncertainty over the future affordability of benefits will remain. If parametric changes are to be adopted, it is critical to introduce a “zero-deficit” clause providing a method and basis for benefit adjustments based on the funding level.

Given the existing level of income, significant benefit cuts will be required to achieve any level of sustainability for both the past and future service benefits.

It is important to ensure that the income of the fund exceeds the cost of future accrual so that new deficits are not created in the future. To this extent, any parametric reforms must have a clear representation of the cost of accrual for future service separately from the deficit arising from past service.

6 Review of the Structural Reform Scenarios

6.1 Introduction

In this section the Independent Peer Reviewer sets out a review of the reform scenarios modelled by the Author as set out in Section 6 of the Author's report relating to structural reforms.

A number of scenarios involving structural reforms have been proposed by the Author, covering a range of possibilities to deal with the future of the Fund. All of the proposed scenarios involve the immediate dissolution or gradual transition of the Fund into a Defined Contribution ("DC") Fund.

In considering the effectiveness of the proposals for structural reforms, the Administrative Committee of the Fund should consider the balance between the following issues:

- A challenge which is of particular interest, is the distribution of stamps between categories of members going forward. Even if the Fund is dissolved and a new DC Fund is created, the distribution of stamps between members' DC accounts would be a major consideration.
- Any structural reform which allows for the continuing accrual of defined benefits should ensure that the contributions and stamps (and any possible increase in these income sources) into the Fund are enough to cover the cost of future accrual.
- The adoption of a structural reform that maintains the current DB Fund for some time (e.g. SR5), should be assessed against its viability in terms of managing the current deficit in the Fund and the risks of deficits arising in the future.
- The impact on the benefits for each category of beneficiary should be considered as some of the reforms impact various categories of members differently, and it is important for the Fund to evaluate or appreciate the equity between different categories of members for each reform.
- The legal challenges of dissolving or structurally changing the Fund and / or setting up a new DC Fund should be assessed and investigated.
- The design considerations of a newly set-up DC Fund, including contributions, investment strategy, and adequacy of benefits should be assessed and investigated.

6.2 Structural Reform Scenarios

The majority of structural reforms proposed are variations involving the dissolution of the Fund and conversion to a DC Provident Fund. Therefore, it is useful to illustrate the potential pay-outs to members under dissolution and the potential prospective benefits at retirement that could potentially accrue under a DC arrangement.

For the scenarios that involve a dissolution of the Fund and set-up of a DC arrangement, we provide the pay-out illustrations below. It is noted that there are numerous methodologies for converting a defined benefit into a cash value and different methodologies and assumption sets can yield different results.

As such, the illustrations below have been based on the methodology and assumptions adopted for the calculation of member liabilities for the current valuation, using the projected unit method. It

should be noted that the illustrations below are provided indicatively based on approximate methods, and the calculation of actual pay-outs to members should be conducted as a distinct exercise to this review.

Structural Reform 1

Overview

Under this reform, the Author proposes the closure of the Fund for all future service and removal of the 60% loading on annual pension (for future beneficiaries only). A defined contribution fund is set up for new entrants and future service.

Considerations

Under this proposal, the challenge of distributing stamps between the two Funds remains. In particular, the continued operation of a DB Fund would mean that the current deficit would need to be rectified using the income from stamps.

This distribution of stamps could be seen as unfair by younger generations of members that do not have significant benefits accrued in the DB Fund. In other words, it could be seen as favouring current beneficiaries and older generations of active members.

Furthermore, maintaining the DB Fund, even after enacting these reforms, would mean that future deficits can still arise and therefore the Fund would always be reliant at least on a certain portion of stamps. It would therefore rely on future generations of active members to produce stamp income so that deficits can be corrected.

An important consideration is the limitation of resources into the newly set-up DC Fund. In particular, if stamp contributions continued to be paid in the DB Fund, this means that the members of the DC Fund would run the risk of accruing significantly lower benefits that could potentially have accrued if the stamps were paid into the DC Fund.

Generally, the impact on the level of benefits for active members is difficult to estimate and would depend on their service in the Fund at the moment of closure and also the accrual of future benefits in the DC Fund.

Structural Reform 2

Overview

Under this scenario, the Author proposes the immediate dissolution of the Fund and its conversion to a DC Fund with its €67m assets distributed on a pro-rata basis to all members, according to the funding level of the Fund.

This reform could be seen as unfavourable for current beneficiaries and older generations of active members who have little time to make alternative plans for their retirement. On the other hand, consideration should be given to a potentially large proportion of current beneficiaries who have received unreduced pension benefits which were well in excess of their contributions into the Fund.

Furthermore, this solution gives a clean start, so that the majority of active members that currently run the risk of receiving substantially reduced benefits, can save for retirement through an individual account in a DC Fund without the current cross generational subsidies.

The method of distributing stamps to members in the DC fund also remains to be decided.

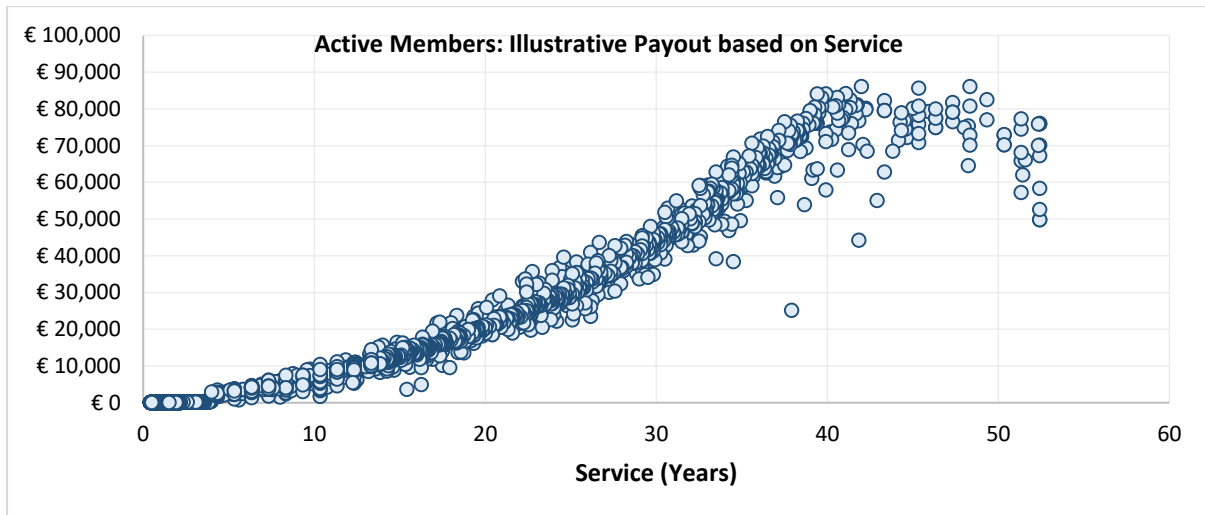
Impact of proposed reforms on benefits

The potential average pay-outs are illustrated for different categories below.

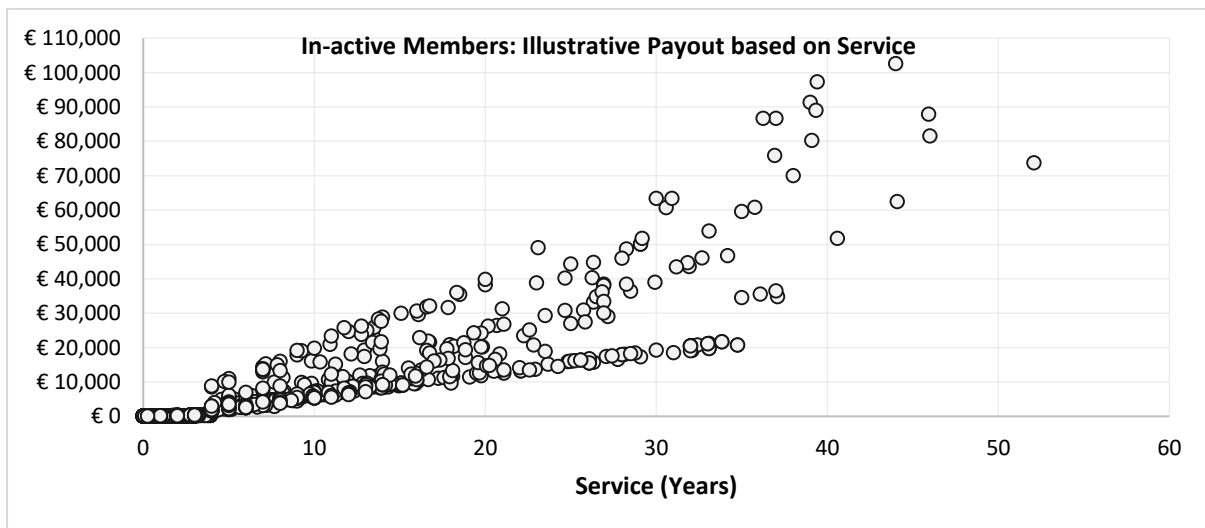
Actives & In-actives

Service Bands (years)	Average Payout by Service/Category (€)	
	Actives	In-actives
0 – 4	100	100
4 – 10	4,000	4,000
10 – 20	12,000	12,000
20 – 30	30,500	25,500
30 – 40	59,000	42,500
40 – 50	76,000	77,000

The following chart illustrates the distribution of potential pay-outs to active members:

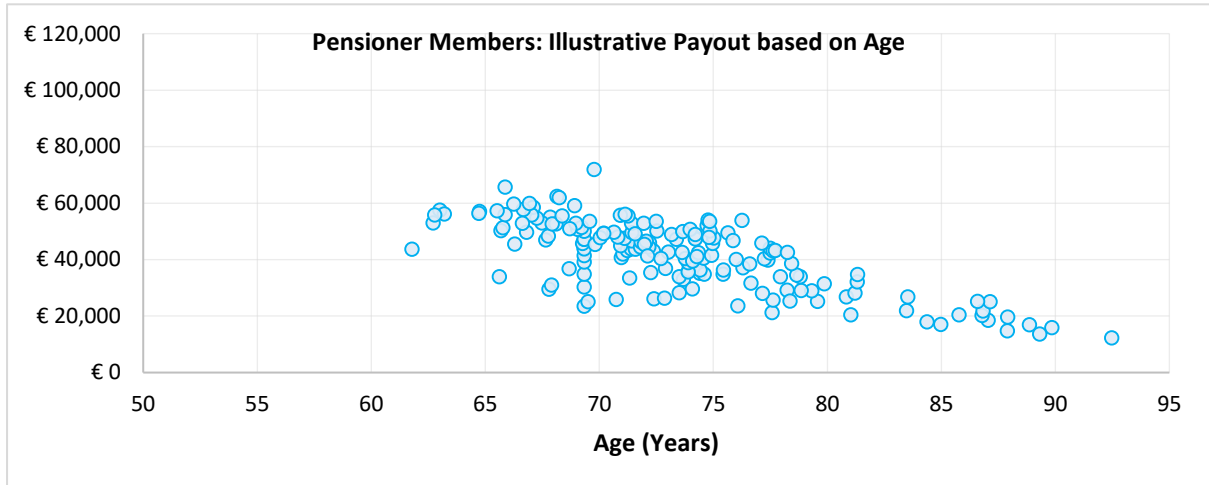


The following chart illustrates the distribution of potential pay-outs to inactive members:



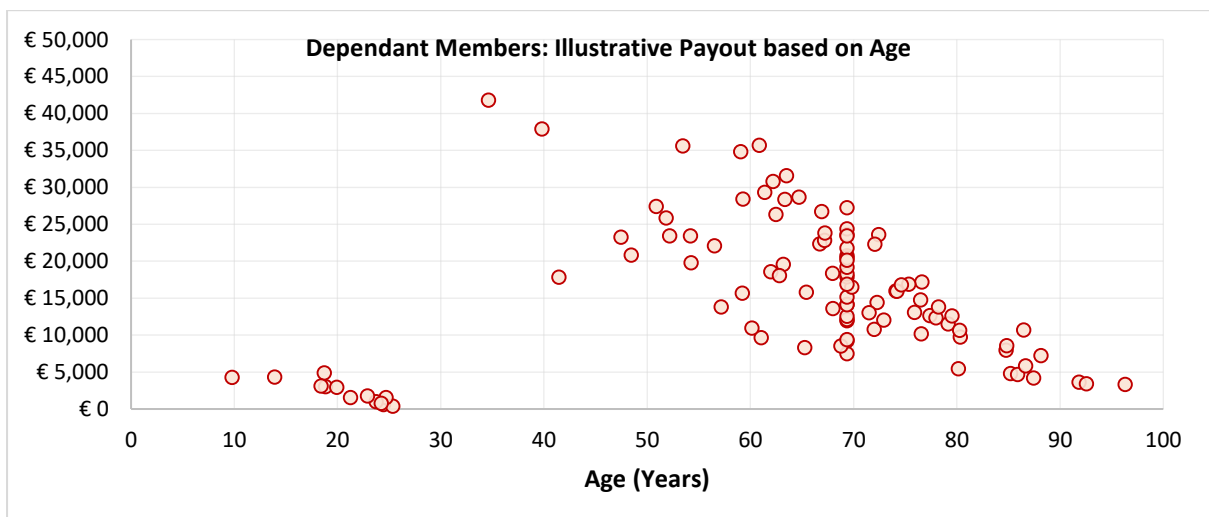
Pensioners

Age Bands (years)	Average Payout by Age (€)
	Pensioners
60 - 65	54,500
65 - 70	49,000
70 - 75	44,000
75 - 80	36,500
80 - 85	25,000
85 - 90	19,500



Widows & Children

Age Bands (years)	Average Payout by Age (€)
	Widows & Children
0 - 30	2,500
30 - 40	40,000
40 - 50	11,500
50 - 60	24,500
60 - 70	19,000
70 - 80	14,500
80 - 90	7,500
90 - 100	3,500



Structural Reform 3

Overview

Under this reform, the Author proposes the immediate dissolution of the Fund and conversion to DC similarly to SR2. However, under this proposal, current beneficiaries (pensioners and dependants) are paid out in full without any adjustment for the funding level of the Fund, and the remaining assets (€28.4m) are distributed to future beneficiaries (active and in-active members).

This reform goes some way in addressing the perceived unfairness of SR2 for current beneficiaries. However, older generations of active members who are close to or at retirement are affected the most since they receive substantially less money compared to SR1 with no time to save additional funds that could provide a retirement income.

Therefore, when compared to SR2, this method seems more favourable to current beneficiaries. Similarly to SR2, the method of distributing stamps to members in the DC fund needs to be decided.

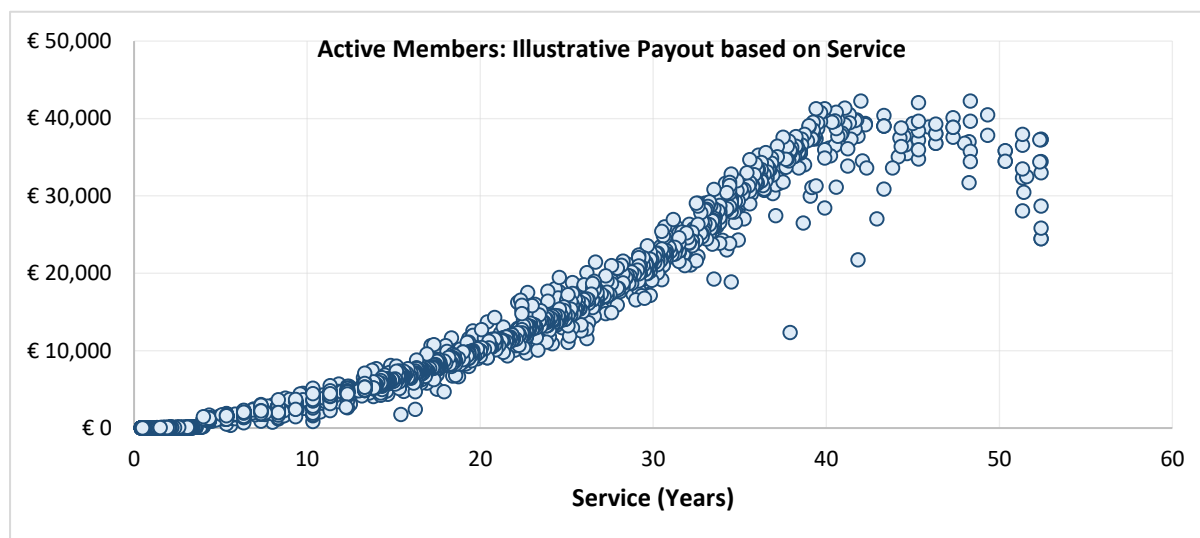
Impact of proposed reforms on benefits

The potential average pay-outs are illustrated for different categories below.

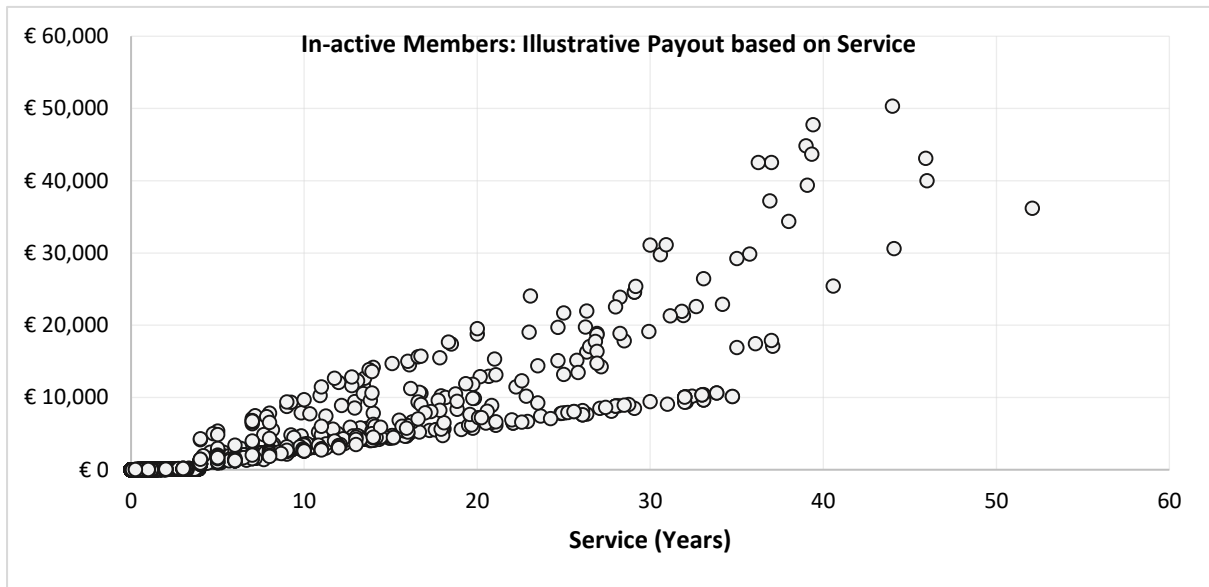
Actives & In-actives

Service Bands (years)	Average Payout by Service/Category (€)	
	Actives	In-actives
0 – 4	-	-
4 – 10	2,000	2,000
10 – 20	6,000	6,000
20 – 30	15,000	12,500
30 – 40	29,000	21,000
40 – 50	37,500	38,000

The following chart illustrates the distribution of potential pay-outs to active members:

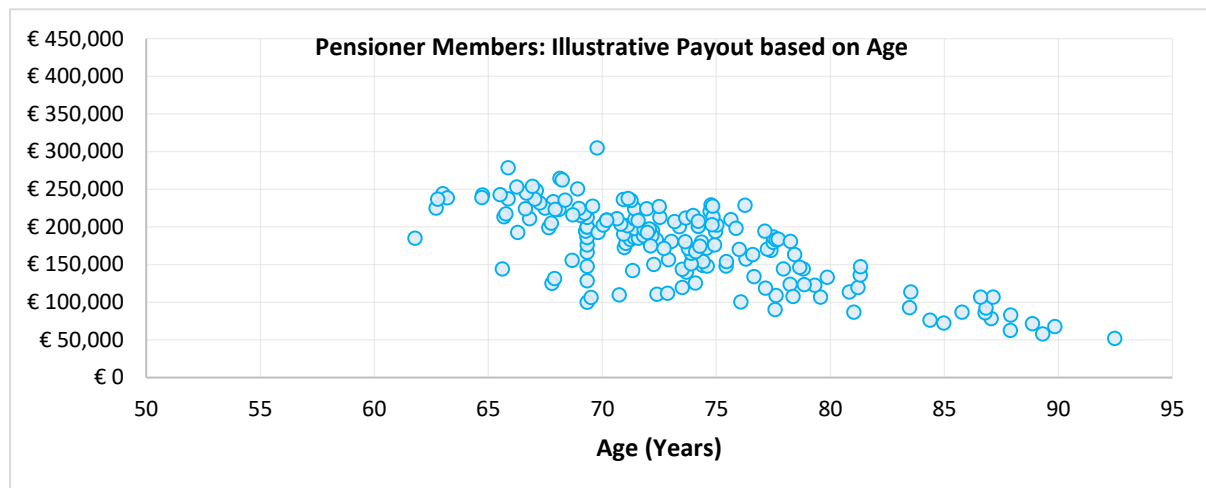


The following chart illustrates the distribution of potential pay-outs to inactive members:



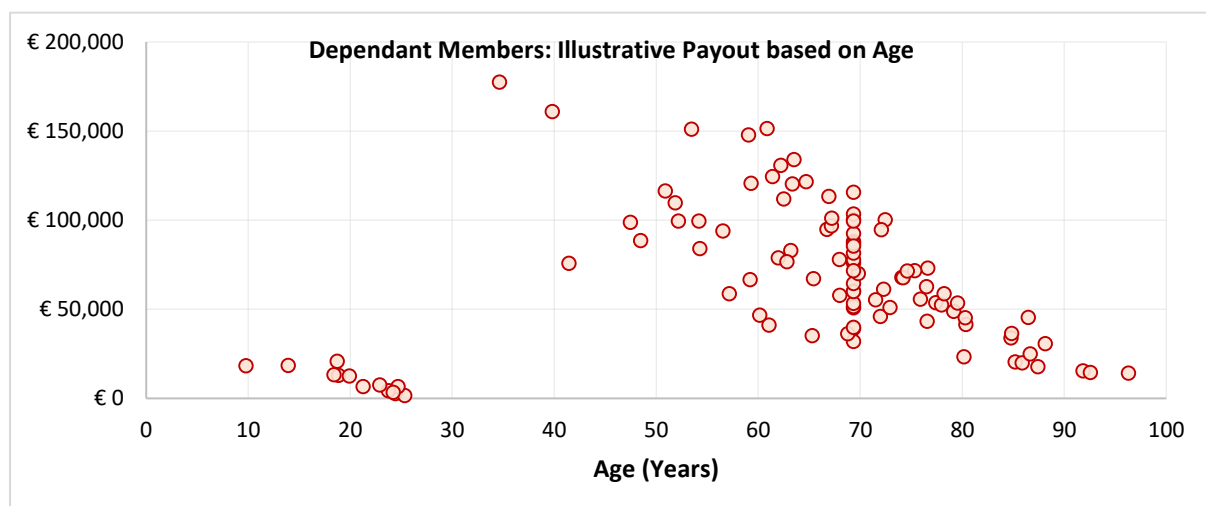
Pensioners

Age Bands (years)	Average Payout by Age (€)
	Pensioners
60 - 65	230,500
65 - 70	208,000
70 - 75	186,000
75 - 80	155,000
80 - 85	106,500
85 - 90	82,000



Widows & Children

Age Bands (years)	Average Payout by Age (€)
	Widows & Children
0 - 30	10,000
30 - 40	169,000
40 - 50	48,000
50 - 60	104,500
60 - 70	81,500
70 - 80	62,500
80 - 90	31,000
90 - 100	14,500



Structural Reform 4

Overview

An important consideration when selecting which reforms to apply is achieving equity between different generations of members and across membership categories.

To that extent, the Author has proposed solutions (SR3&4) which consider the priority of pensioner and dependant members who are currently in receipt of a pension and may be financially dependent on the income from the Fund, with little or no time to make alternative plans for their retirement. On the other hand, consideration should be given to a potentially large proportion of current beneficiaries who have received unreduced pension benefits which were well in excess of their contributions into the Fund.

Reform SR4 builds on SR3 and allows for larger payments to be made to active members who are closer to retirement with less time to plan for changes in their retirement income. Under this method, younger members receive smaller pay-outs due to the redistribution of the Fund's assets to current beneficiaries and active members who are close to retirement. Therefore, this method could be seen as unfavourable to younger generations of active members.

Impact of proposed reforms on benefits

The average pay-out for active and in-active members under SR4 is illustrated in the table below:

Service Bands (years)	Average Payout by Service/Category (€)	
	Actives	In-actives
0 – 4	-	-
4 – 10	500	1,000
10 – 20	2,500	4,500
20 – 30	13,000	12,500
30 – 40	41,000	23,500
40 – 50	59,500	60,000

However, it is noted that since the distribution method is dependent on age, SR4 might be practically difficult to implement, particularly for in-active members where dates of birth are unavailable for approximately half of the population.

Structural Reform 5

Overview

Under this reform, the Author has proposed a way in which the Fund could transition into a DC arrangement over a period of 30 years with the two Funds running in parallel.

Considerations

This proposal aims to smooth out the transition for members closer to retirement and may be seen favourably by some categories of members. It should be noted that during this period, the challenge of distributing stamps between the two Funds as well as the risks associated with additional deficits arising in the DB Fund will remain.

The perceived fairness of each of the methods should be evaluated against the objectives of the Administrative Committee. An additional consideration is the importance of removing or mitigating DB specific risks which would be difficult to manage, especially over a long time period of 30 years during which additional deficits could arise.

The Administrative Committee should consider simplicity and cost as a factor in selecting the preferred reforms methodology, particularly due to the challenges involved in communicating the complexities of such a method to members.

It is expected that a method such as SR5 would be costly to implement and maintain over a 30 year period and communication of the prospective retirement benefits to different beneficiaries could prove to be challenging.

6.3 Illustration of Defined Contribution Structure

Converting the Fund from DB to DC would result in the accumulation of contributions in member accounts that are invested to provide a lump sum benefit at retirement. Considering the current level of member contributions at €480 per annum and the income from stamps (c. €4.7m), it is possible to provide an illustration of the accumulated member account at retirement.

Illustratively, we have assumed that income from stamps is awarded in direct proportion to the membership. Based on the current number of active members, 3,479 at the valuation date, this would imply additional contributions coming from stamps of €1,400 per member, making the total annual contribution €1,880.

The value of the accumulated member account at retirement (age 65) is provided in today's money terms (Present Value "PV") by discounting by inflation, for members with different career lengths as illustrated below:

Age at Entry	Service in Years	PV of Account with Stamps	PV of Account without Stamps
25	40	€85,000	€16,500
30	35	€73,000	€14,500
35	30	€61,500	€13,000
40	25	€50,500	€11,500
45	20	€40,000	€9,000

The illustration is based on the assumption for increases in member contributions of 0% per annum and 2% per annum for stamps (in line with inflation), and assuming an investment return of 3% per annum.

6.4 Conclusions

The proposed reforms should be assessed in light of the objectives of the Administrative Committee of the Fund, and the advantages and disadvantages of each method. In particular, the Administrative Committee should consider the following factors:

- 1) The perceived fairness of each of the methods and where a desire exists to care for particular group of beneficiaries.

- 2) The challenges involved in the distribution of stamps to two separate Funds running in parallel (DB and DC) but also the challenges in distributing the income from stamps to members within a single DC Fund.
- 3) The relative simplicity in implementing and communicating the selected structural reform.
- 4) The cost of implementation and the timelines over which such a reform could be feasibly completed.
- 5) The potential pay-outs to members and the likely success of having such a reform accepted by members.
- 6) The legal merits of each proposal within the Rules of the Fund and applicable legislation/regulations (as well as the impact of likely litigation against the Fund from its members).
- 7) The urgency of the matter given that the Administrative Committee has not yet taken any actions since the problem was identified (e.g. by suspending all benefit payments). We highlight that for every month which passes by without any action, there is a reduction in the security of members' benefits.

7 General Observations

7.1 Global and Cyprus Pension Trends

When considering the future of the Fund, the Administrative Committee may want to consider trends in the global and local markets. In particular, over the past 15 years, employers and governments have been closing their DB plans and switching to defined contribution arrangements to better be able to manage the cost and volatility arising from pensions obligations.

It is noted that the Cypriot government DB scheme was closed to new members on 1 October 2011. The government has recently announced a proposal for consultation under which it plans to set up a DC plan for employees hired after the DB closure date.

7.2 Challenges in designing or setting up a DC Scheme

If the Administrative Committee decides to set up a DC scheme, there are a number of aspects of the design of the scheme that should be addressed through a formal design review.

A few of the considerations are set out below:

- 1) Achieving adequacy of retirement income at retirement through contribution rates that target an appropriate the level of benefits.
- 2) Finding a fair method for attributing stamps to the retirement accounts of DC members.
- 3) Designing the investment strategy of the Scheme in order to balance the needs and risk appetites of the different generations of members.

7.3 Risk of inflation and sustainability of future income

It is noted that the Fund awards retirement benefits which are fixed in nature and do not increase in line with inflation. The Author, in their review and proposed reforms, have assumed that a large proportion of the income of the Fund (relating to stamps) increases in line with inflation at a rate of 2% per annum.

We emphasize that the realisation of these increases in the future is paramount to the continued operation and sustainability of the Fund. The Fund therefore is exposed to the risk of inflation to a significant extent. It is therefore recommended that the sensitivity of the results to the inflation parameters is investigated in order to understand the impact of this risk.

In conjunction with the risk of inflation, the income of the Fund is interlinked with the population of active members and also the activity of the legal profession which produces the income relating to stamps. Therefore, any instability or change in this income could materially jeopardise the long-term successful implementation of a solution which would be reliant on the stability of this income.

It is also noted that stamps are considered social funds and this may further complicate the utilisation of stamps for the financing of the Fund in the future, further increasing the risk of their availability.

APPENDIX: Summary of the Data Provided

Individual member data

Active Members	31 December 2017
Number of members	3,479
Average age (years)	39.9
Average pensionable service (years)	12.3

In-active Members	31 December 2017
Number of members	2,149
Average age (years)	38.3
Average pensionable service (years)	5.3

Pensioners	31 December 2017
Number of members	178
Average age (years)	73.3
Average monthly pension	€1,055

Widows	31 December 2017
Number of members	92
Average age (years)	68.9
Average monthly pension	€469

Children	31 December 2017
Number of members	14
Average age (years)	22.4
Average monthly pension	€213

Where data was missing or unavailable, for example in the case of dates of birth, these pieces of data have been estimated based on the averages of the respective population of members.

Income from contributions during the year 2017

Type of income	Year 2017
Member contributions	€1,397,090
Stamp contributions	€4,284,076
Lump sum contributions	€446,987

Assets as at 31 December 2017

Type of Asset	31 December 2017
Local Equities	€125,175
Global Equities	€806,855
Local Government Bonds	€2,409,280
Local Corporate Bonds	€296,250
Global Bonds	€1,439,864
Property	€7,265,714
Cash	€54,607,575
Total	€66,950,713

Other Data

As part of our review we have also received the following data:

- The report of the Author named “Actuarial Valuation and Design Review Report as at 31 December 2017”
- The Statement of Investment Principles of the Fund
- The financial statements of the Fund for the years 2011 – 2016
- The Rules for the operation of the Fund