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Content of the EFRAG discussion paper on pension accounting Illustrative Example

Objective

- 1 The objective of this paper is to discuss how alternative approaches should be illustrated in the discussion paper and to discuss the implications of these approaches compared to existing IAS 19 *Employee Benefits* defined benefit (DB) model.

Cases used for illustration

- 2 The discussion paper will show the effects of applying three approaches to a case in which the employees are promised the higher of, at the time of retirement, the actual return on plan assets or a fixed return on plan assets. The approaches that will be considered are:
 - (a) An approach under which the expected return on pension assets is set to equal the discount rate. Under IAS 19, an entity would project the benefits of a plan with a return-based promise based on the expected return of the asset plans;
 - (b) A fair value approach; and
 - (c) A fulfilment value approach.
- 3 Regarding the fulfilment value approach, the EFRAG Secretariat and EFRAG PAP three models when determining what cash inflows should be included when calculating the fulfilment liability and assessed the effects of two of them (as the effect of the third model mentioned in paper 11-02 would be close to the second model):
 - (a) Case 1 – Including only the employee contributions in the cash inflows;
 - (b) Case 2 - Including both the employee and employer contributions as cash inflows.
- 4 In both cases, the amounts are adjusted to consider the initial fair value of the guarantee and a risk adjustment.
- 5 The main purpose of the illustration is to show the patterns of liability and cost recognition when the approaches are applied to the pension plans included in the scope of the EFRAG project. This include showing the effect of the independent measurement of the asset plans and pension obligation although at settlement the latter will be dependent on the former.

Illustration of the example

Terms of the plan

- 6 Each year, Entity X makes a basic contribution to the employee's pension account. In the first five years of employment, the basic contribution is 0.5 per cent for the part of the salary below the threshold and 2.5 per cent for the part above. After the first five years, the percentages change to 1 and 5 per cent respectively.
- 7 The salary threshold is initially set at 50.000 CU and is adjusted each year based on the annual inflation rate.
- 8 The employee can make a supplementary contribution, which cannot exceed 30 per cent of the employee's gross salary for the year. Entity X makes an additional matching contribution corresponding to the supplementary contribution made by the beneficiary as long as the matching contribution does not exceed its own minimum contribution. Entity X will not match supplementary contributions exceeding its own minimum contribution. For the purpose of the example, the employee's contribution is always equal to employer's basic contribution.
- 9 The pension account is held by Entity X, which makes the decisions about how the funds are invested. The accumulated benefit is paid off at the end of the service period. If the beneficiary dies before retirement, the benefits are paid to the entitled heir.
- 10 The accumulated benefit is equal to the total contributions and the return generated on the plan assets. Entity X guarantees a minimum return of 5.5 per cent p.a., cumulated over the entire service period. The promise is therefore the higher of the actual return on the plan and the guaranteed return.
- 11 The contributions to the plan are paid at the end of the year.

Financial assumptions

- 12 Expected return assumptions are inspired by published return assumptions for US public pension plans¹. The table below shows that in the first years, it is expected that the return will be 8 per cent per year. In the first years it is expected that the return will increase to 8.5 per cent in later years. However, that expectation is later revised, and it is instead expected that the return will start to decline.
- 13 The actual return is based on the return of the United Nations Joint Staff Pension Fund², which is a large US pension fund for which return data is available. For Year 11 (which corresponds to year 2017) the return of Financial Year 10 (2016) is reused.

	Financial year										
Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
8.0%	13.9%										
8.0%	8.0%	-24.9%									
8.0%	8.0%	8.0%	20.2%								
8.0%	8.0%	8.0%	8.0%	10.3%							
8.0%	8.0%	8.0%	8.0%	8.0%	-3.9%						
8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	12.7%					
8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	7.5%	15.5%				
8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	7.5%	7.0%	3.2%			
8.5%	8.5%	8.0%	8.0%	8.0%	8.0%	7.5%	7.0%	6.5%	-1.0%		
8.5%	8.5%	8.0%	8.0%	8.0%	8.0%	7.5%	7.0%	6.0%	6.0%	5.2%	
8.5%	8.5%	8.5%	8.0%	8.0%	7.5%	7.0%	6.5%	6.0%	5.5%	5.0%	5.2%

¹ See: <http://www.pionline.com/>, <https://www.twosigma.com/>, and <http://www.nasra.org/>

² Source: <http://imd.unjpsf.org/>

- 14 The return on high quality corporate bonds (HQCB) is based on the US Treasury High Quality Bond Yield Curve³. The table below shows the interest rate per year used to discount the lump-sum amount to be paid at the end of Year 11 to the end of the various financial years:

	Financial year										
	0	1	2	3	4	5	6	7	8	9	10
Discount	5.45%	5.89%	6.97%	4.14%	3.88%	3.21%	1.54%	1.21%	1.59%	1.69%	1.67%

- 15 Based on the assumptions, the cumulative return at the end of the period will be lower than the guaranteed return. Therefore, the entity will need to pay an additional contribution to cover the shortfall for 651 CU. It is assumed that the shortfall is paid at the settlement date.

Salary and service assumptions

- 16 The beneficiary is expected to work for Entity X for 11 years. The initial salary is 57.000 CU and is expected to increase every year based on the annual inflation rate. In addition, every second year the salary will increase by approximately 2.1 per cent (in addition to the inflation). The additional increase is therefore expected to apply for the salary for Year 3.

	Financial year										
	1	2	3	4	5	6	7	8	9	10	
Inflation	1.30%	1.50%	2.00%	3.00%	3.80%	3.80%	3.80%	3.80%	3.80%	3.80%	
Increase		2.10%		2.10%		2.10%		2.10%		2.10%	

- 17 The beneficiary makes supplementary contributions equal to the maximum amount Entity X will match. In the first three years, the employee's and entity's contributions amount to:

EUR	Year 1	Year 2	Year 3
Employee contribution	425	431	467
Entity X's contributions	850	861	935

Illustration of the issue on the illustrative case

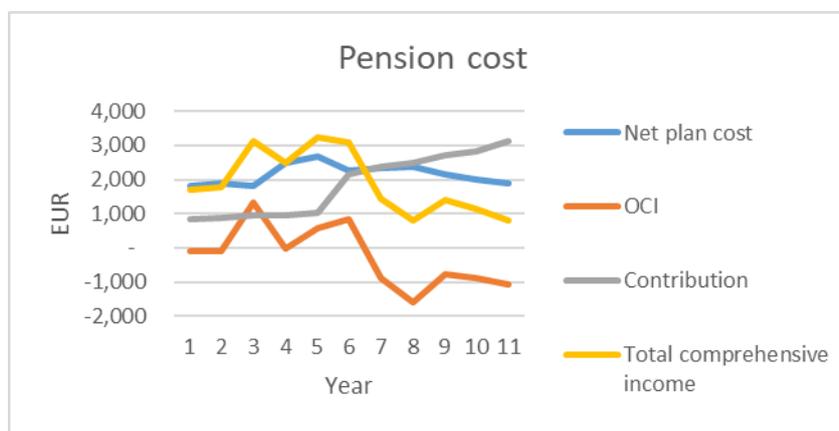
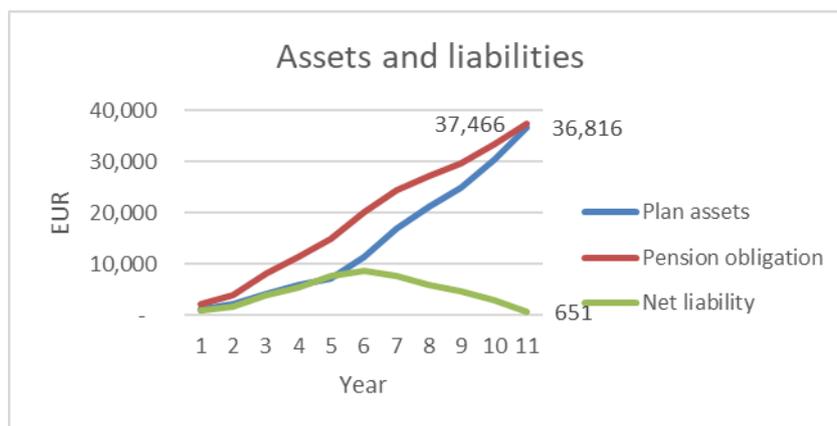
- 18 As previously required by EFRAG TEG, we illustrate each approach with a graphic showing the plan assets, the pension obligation and the net liability/asset at the end of each year. Another graph will show the service cost recognised in comprehensive income, the cash flows and the total effect on profit or loss and comprehensive income.
- 19 The graphs do not include the final payment to cover the shortfall resulting from guaranteed return.

IAS 19 – Defined benefit plans

- 20 The amounts include the effect of the backloading as required in paragraph 70 of IAS 19. Significant amounts in OCI occur for periods when:
- (a) There is a significant decrease in the discount rate (in Year 3, the discount rate decreases from 6.97% to 4.14%; in Year 6, it decreases from 3.21% to 1.54%);

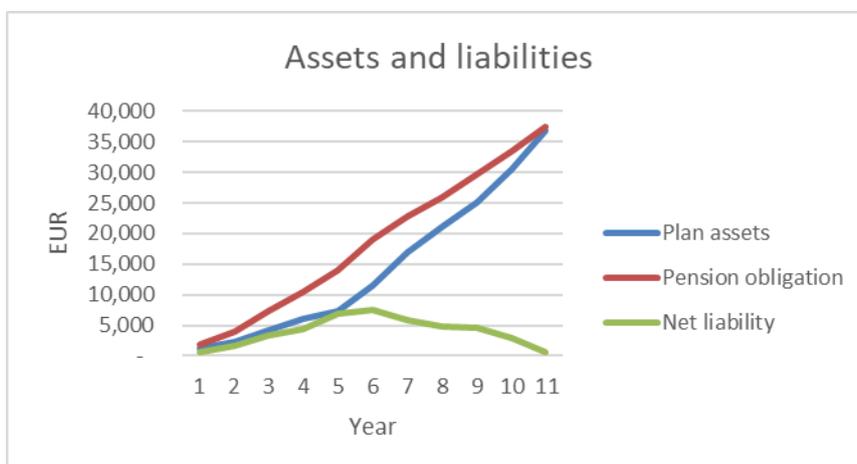
³ The data used is available here: <https://www.treasury.gov/>. The discount factor used in Financial Year 1 is the HQCB rate from December 2006 for bonds with a maturity of ten years. Linear interpolation is used to estimate the interest rate on bonds with a maturity of 1, 3, 4, 5, 6, 7, 8 and 9 years.

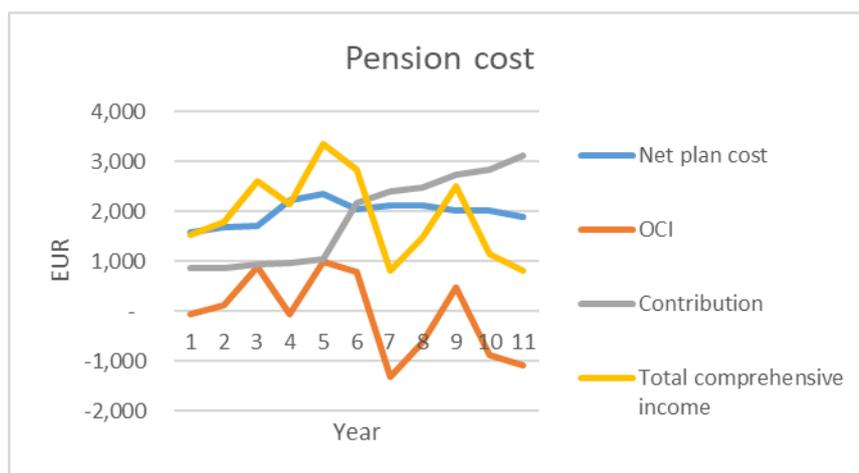
- (b) There is a significant decrease in the projected settlement amount (in Year 9, the projected settlement amount decreases from 39.051 CU to 37.446 CU).



A model where the benefits are projected using the discount rate

- 21 Under this approach, the pension obligation (and the net liability) is measured at an amount lower than under IAS 19 for those years where the average projected return exceeds the discount rate. The pension obligation still exceeds the plan assets, even when there is no projected shortfall, because of the backloading effect. At the end of the term, the pension obligation is the same as under IAS 19.
- 22 In relation to the cost allocation, this approach results in lower service cost since the obligation is measured at a lower amount. The total OCI balance increases because the decrease of the actual returns compared to the projected returns in the later years (that was creating a significant negative OCI change in the IAS 19 calculation) does not have an impact under this approach.



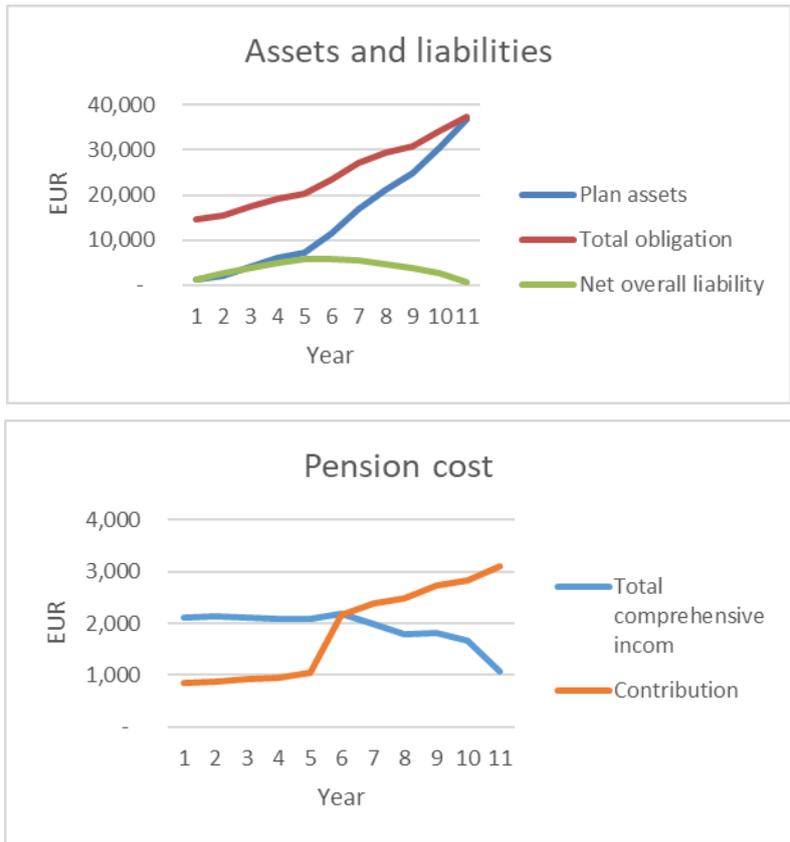


A fulfilment value model as per IFRS 17 Insurance Contracts

- 23 In both cases, at inception, the expected outflows exceed the inflows. The initial deficit is higher in the case, which excludes the employer’s contributions.
- 24 The initial deficit is part of the compensation for the services that the employee will provide over the term. Therefore, contrary to IFRS 17 (where the initial deficit would represent an onerous contract and be immediately expensed in profit or loss), it should be allocated to the period of service.
- 25 There are different ways to allocate this initial deficit. In the graphs presented below, it is assumed that the amount is allocated on a straight-line basis. Other approaches could be to allocate it based on a financial amortisation or use the pattern of contribution.

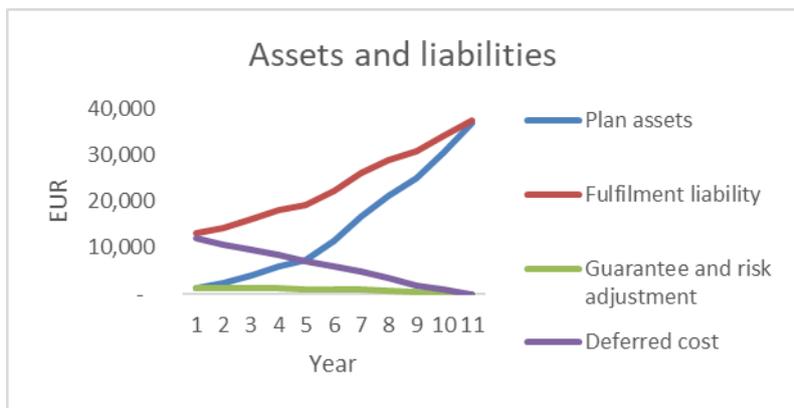
Questions for EFRAG TEG

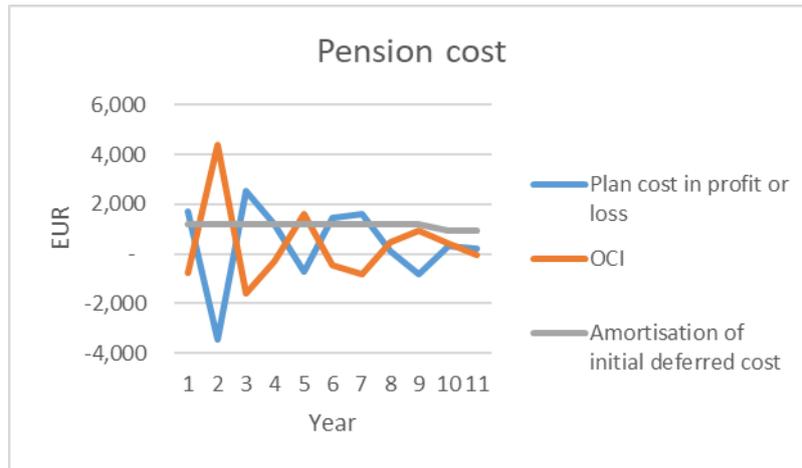
- 26 Does EFRAG TEG have comments on allocation pattern of the initial deficit? What conceptual basis should be used?
 - 27 In the version where the employers’ contribution is included in the measurement of the initial deficit, there is a lower amortisation charge, but the paid contributions need to be expensed to profit or loss.
 - 28 The initial fair value of the minimum return guarantee and risk adjustment is also included in the initial deficit. These values are not being remeasured during the period. When the guarantee kicks in, the ultimate outflow is based on the guaranteed return and the value of the guarantee and risk adjustment are eliminated.
- Case 1 Illustrations – Incorporating both the employee and employer contributions in the liability calculation*
- 29 The effects of applying the requirements of the fulfilment value model for Case 1 are illustrated below. In the graph, the total plan assets do not include the deferred deficit, so the net overall position does not equal the difference between the plan assets and the total obligation.
 - 30 The total comprehensive income has a declining pattern because it is the sum of the amortisation of the initial deficit (which is straight-line) and net interest cost, which declines because of the decline in the net liability. However, as described below, the pattern on net interest is also impacted by the changes in the discount rates.



Graphs where all components are reflected separately

- 31 The following graph illustrates a more detailed breakdown. The net interest portion of the plan cost in profit or loss is calculated based on the net liability and the actual yields. Since in the example, in the initial years there are significant changes in the yields (between Year 1 and Year 2 the yield goes from a positive 13.9% to a negative 24.9%) the resulting cost is highly volatile.
- 32 This effect would be partially offset if the amortisation pattern of the initial deficit was based on a financial amortisation rather than on a straight-line pattern. However, negative yields could still result in negative plan costs in profit or loss.



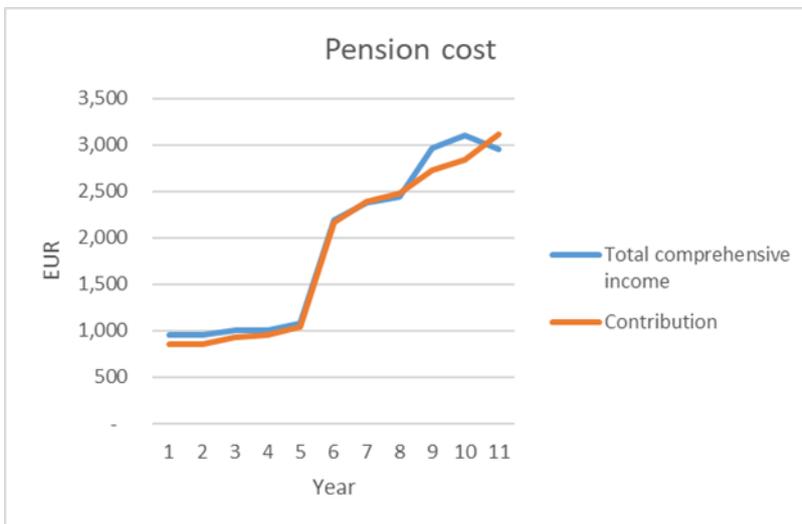
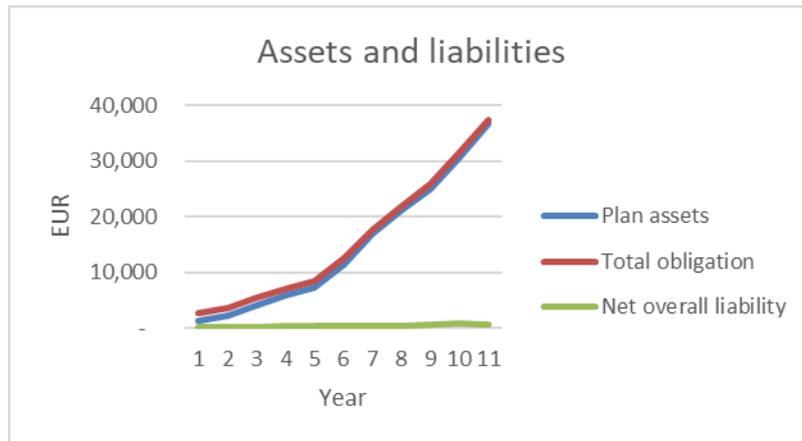


Case 2 Illustrations – Incorporating only the employee contributions in the liability calculation

- 33 The effects of applying the requirements of the fulfilment value model for Case 2 are illustrated below. The employer’s contributions are expensed in profit or loss when paid.

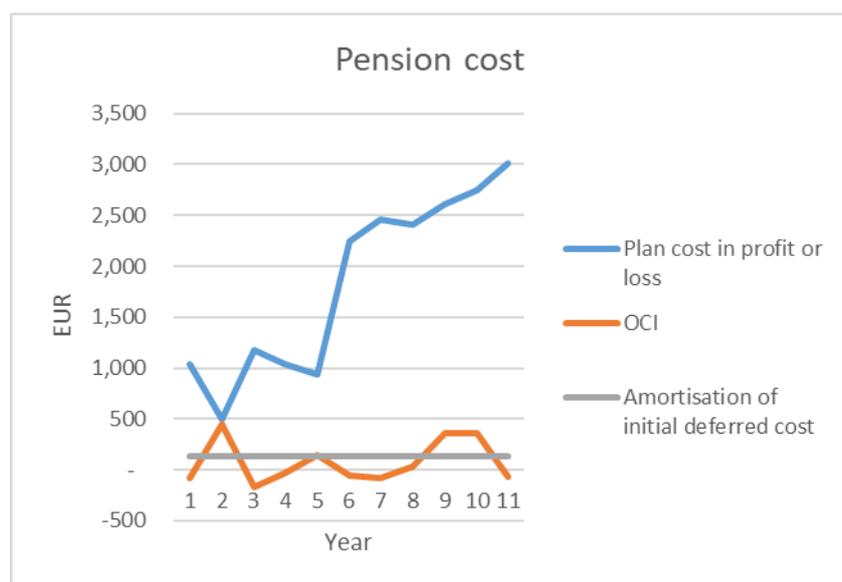
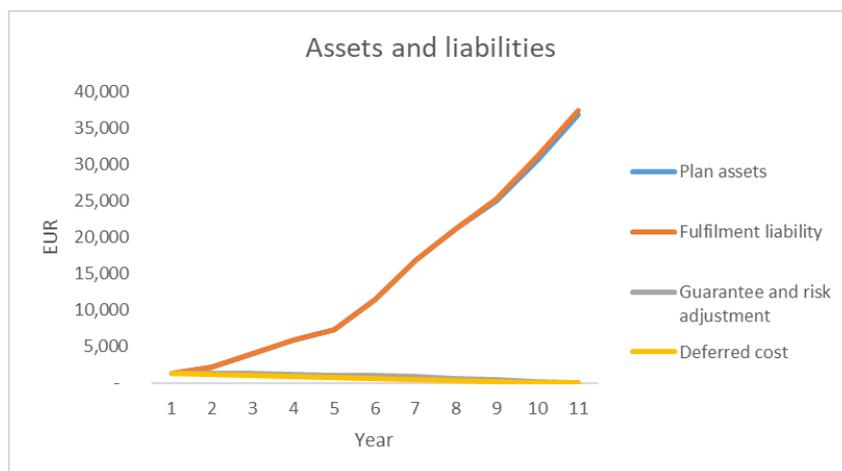
Questions for EFRAG TEG

- 34 Does EFRAG TEG have comments on allocation pattern of the employer’s contributions? What conceptual basis should be used?



Graphs where all components are reflected separately

- 35 The following graph illustrates a more detailed breakdown. The net interest has a reduced impact on the plan cost in profit or loss, compared to Case 1, because of smaller value of net liability.



Questions for EFRAG TEG

- 36 Does EFRAG TEG have comments and/or suggestions on the presented illustration of application of the approaches?