

STAFF PAPER

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IASB® Meeting

Project	Pension Benefits that Vary with Asset Returns		
Paper topic	Educational session – Illustrative examples		
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Purpose

1. In January 2020, the Board received an update on the research project on Pensions Benefits that Vary with Asset Returns. The Board agreed that it would be helpful to develop examples to illustrate how the proposed capped approach (which is described in paragraph 15 below) would apply and how the accounting outcome of the capped approach would compare to the outcome of the existing requirements in IAS 19 *Employee Benefits* for defined benefit plans with benefits that vary with asset returns,
2. The objective of the research is project is to assess whether the capped approach can be developed in a way that:
 - (a) would have sufficient effect to be worth the costs of developing, exposing, finalising and implementing any resulting changes to IAS 19;
 - (b) does not require a significant amount of work for stakeholders, the Board and the staff; and
 - (c) does not have unintended consequences.
3. The illustrative examples in this paper may help the Board in assessing the effect of the approach in the given fact pattern and how the capped approach would interact with other requirements for defined benefit plans.

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4. We will not ask the Board to take any decision at this session.

Structure of this paper

5. This paper is structured as follows:
 - (a) scope of this research project (paragraphs 7-9)
 - (b) background on IAS 19 (paragraphs 10-11)
 - (c) pension benefits that vary with asset returns (paragraphs 12-14)
 - (d) description of the capped approach (paragraphs 15-16)
 - (e) example:
 - (i) illustration of the facts in the example (paragraphs 18-24)
 - (ii) illustration of the outcome (paragraphs 25-53)
 - (iii) the staff's analysis of the outcome (paragraphs 54-67);
 - (f) next steps (paragraphs 68-69); and
 - (g) question to the Board.
6. Appendix 1 includes a comparison of the accounting outcome under IAS 19 and the capped approach, when the initial fact pattern is modified from the fact pattern illustrated in paragraphs 18-24.

Scope of the research project

7. Following the 2015 Agenda Consultation, the Board added to its research pipeline a project to consider whether it would be feasible, without undertaking a comprehensive review of IAS 19, to eliminate an inconsistency in the measurement of pension benefits that depend on asset returns. That inconsistency is discussed in paragraphs 13-14 below.
8. In adding that project to the research pipeline, the Board agreed with the staff's recommendation that this investigation should focus solely on the capped approach, discussed in paragraphs 15-16. If that approach turns out not to be viable, the staff

noted that it would recommend to the Board doing no further work on post-employment benefits in the 2017-2021 Agenda Cycle.

9. The project became active in September 2018. The Board's last discussion was in January 2020.

Background on IAS 19

10. An entity classifies all post-employment benefit plans as either defined contribution (DC) plans or defined benefit (DB) plans applying paragraphs 26–31 of IAS 19. IAS 19 defines a DC plan as a post-employment plan under which an entity pays specified contributions into a separate entity and will have no obligation to pay further contributions if the fund does not hold sufficient assets to pay all benefits relating to service in the current and prior period.
11. A post-employment plan that is not a DC plan is a DB plan. An entity must measure its asset or liability under a DB plan as the difference between the present value of the defined benefit obligation (DBO) and the fair value of the plan assets, after considering the asset ceiling described in paragraphs 64–65 of IAS 19. An entity must measure the present value of the DBO using an estimate of the ultimate cost to the entity for employees' service in the current and prior periods, discounted using bond rates applying paragraphs 83–86 of IAS 19.

Pension benefits that vary with asset returns

12. In some pension plans, some or all benefits paid to employees vary with the return on a specified pool of assets. IAS 19 does not provide guidance specific to such benefits. To apply the general requirements in IAS 19, an entity makes an estimate of the ultimate costs on the basis of an estimate of the return on the specified pool of assets. In practice, those estimated returns are often higher than bond rates. The benefits are then discounted back using the rate specified in IAS 19.
13. For instance, assume a benefit payable in one year out of a contribution of CU100. If the currently expected rate of return is 5% and the discount rate specified by IAS 19

is 3%, under existing IAS 19 requirements an entity would measure the defined benefit obligation by projecting forward the cash outflows at the expected rate of return of 5% and then discount the cash flows back at 3%, which would result in a present value of CU102.

14. The outcome of this measurement is subject to two criticisms:
- (a) it does not depict faithfully any attribute of the asset. For example, it differs from the fair value of the specified assets that determine the amount of the payment to employees. It results from combining cash flows determined on one basis with a discount rate that is determined on a different basis. The fair value of the plan assets implicitly incorporates a reduction for the market price of the risk inherent in future cash flows from the plan assets. In contrast, the present value of the DBO does not incorporate such a reduction.
 - (b) in addition, in many cases, the underlying assets that determine the amount of the payment to employees are held by the plan. IAS 19 requires an entity to measure those plan assets at fair value. This difference in measurement basis can result in the entity recognising a net liability even if the entity's obligation cannot result in it being required to pay additional contributions for services received in past and present periods.

Description of the capped approach¹

15. Under the capped approach, the projected cash flows that vary with the asset returns would be capped so that they do not exceed the discount rate specified under IAS 19.
16. The cap would apply only to the benefits that vary with the level of returns on specified assets. If the plan provides other benefits, such as coverage of medical costs, these other benefits would be measured using the general requirements in IAS 19.

¹ Paper 6 for the January 2020 Board meeting includes additional information on the background and history of the project.

17. The capped approach has the following advantages:
- (a) it does not require identifying a sub-population of post-employment plans. The IFRS Interpretations Committee and the Board have had several attempts to do this, without success. The approach automatically applies to the situations that cause the problem that it resolves;
 - (b) it would not fundamentally change IAS 19;
 - (c) it would be consistent with the “net interest approach” in IAS 19, which requires an entity to use the discount rate to calculate the interest income on plan assets, even when the expected return on the plan assets is different from that discount rate;²
 - (d) it would not be necessary to determine exactly which discount rate is most appropriate for post-employment benefits in general. The feedback received on the Exposure Draft *Discount Rates for Employee Benefits* (Proposed amendments to IAS 19), published in 2009, shows that it may be difficult to achieve a consensus on that issue; and
 - (e) it could be applied to plans that provide a combination of benefits that vary with asset returns and other benefits that do not vary with asset returns.

Example

Illustration of the facts in the example

18. At the Board meeting of January 2020, the staff was instructed to develop illustrative examples to compare the accounting outcome under the capped approach with the outcome of applying the existing requirements. The examples are a means of identifying possible practical issues in the application of the approach.

² Using that discount rate for this purpose affects the split between two components of the pension expense, (a) the amount of defined benefit cost recognised as net interest and presented in profit or loss; and (b) the amount of actuarial gains and losses presented in other comprehensive income. However, using that discount rate for that purpose does not affect the measurement of the plan assets or of the net surplus or deficit.

Terms and conditions of the plan

19. The example assumes a plan with the following main terms and conditions:
- (a) the plan is funded by contributions from the employer only. Contributions are made at the end of each year;
 - (b) the contributions are equal to a fixed percentage of the salary in the current year of service;
 - (c) there are no service or other vesting conditions. For simplicity, the staff have ignored what happens if employees leave before the end of Year 8;
 - (d) the account value is credited each year with:
 - (i) the contributions made by the employer; and
 - (ii) the higher of:
 1. the return of a specified underlying pool of assets; and
 2. a minimum guaranteed return.
 - (e) the employees receive a lumpsum at the end of Year 8.
20. The capped approach does not apply to DC plans, because when applying IAS 19 to such plans an entity does not estimate the cash flows or discount them. The staff selected a benefit containing a ‘higher-of’ guarantee so that the plan would be classified as a DB plan. The capped approach would not change the accounting for such a guarantee (see paragraphs 64–67).

Initial assumptions

21. The following table illustrates the initial assumptions in relation to the contributions paid. Contributions amount to 8% of the salary for the year.

Table 1 – Expected contributions

Year	Current salary	Contribution
1	75,000	6,000
2	76,613	6,129
3	82,856	6,629
4	84,638	6,771
5	91,536	7,323
6	93,504	7,480
7	101,124	8,090
8	103,299	8,264

22. The entity expects returns of 4% p.a. that would exceed the guaranteed rate of 1.5%. As a consequence, it is expected that the plan will not be in a deficit position and will not require additional contributions.
23. The initial estimate of the discount rate based on the yield of the high-quality corporate bonds is 2.31%. As a consequence, the discount rate is less than the expected return rate.
24. Based on the initial assumptions, the following table illustrates how the account value and the fair value of the plan assets are expected to change over the period of service. The return is determined by applying the expected return rate of 4% to the opening balance of the account value.

Table 2 – Expected changes in account value and plan assets

Account value				Plan assets	
Opening	Return	Contribution	Closing	Opening	Closing
-		6,000	6,000	-	6,000
6,000	240	6,129	12,369	6,000	12,369
12,369	495	6,629	19,492	12,369	19,492
19,492	780	6,771	27,043	19,492	27,043
27,043	1,082	7,323	35,448	27,043	35,448
35,448	1,418	7,480	44,346	35,448	44,346
44,346	1,774	8,090	54,210	44,346	54,210
54,210	2,168	8,264	64,642	54,210	64,642

Illustration of the outcome

Initial scenario

25. In the following paragraphs, we will illustrate what amounts the employer would report under the existing requirements and under the capped approach. To determine the amounts reported under the existing requirements, the employer needs to consider which requirements it needs to apply.
26. Firstly, the entity needs to decide whether the plan is a defined contribution plan or a defined benefit plan. Based on the assumed terms, the plan is a defined benefit plan. The main reason is that the terms include a minimum return guarantee. The fact that, based on the initial assumptions, the expected returns exceed the minimum return guarantee does not affect the classification of the plan.
27. However, a minimum return guarantee is not an essential element of a defined benefit plan. It is not the intention of this paper to discuss the classification requirements in IAS 19.
28. Secondly, the entity needs to apply paragraph 70 of IAS 19 to decide whether the plan formula allocates a substantially higher benefit to later years of service; if it does, the entity needs to allocate the benefits on a straight-line basis over the period of service. In the paper, we refer to this as the straight-lining adjustment.
29. In the example, the contributions rise in proportion to salary progression. As noted in paragraphs 13(c) and 120 of the Basis for Conclusions of IAS 19, the Board discussed in December 2010 whether the straight-lining adjustment is required in a plan formula where contributions vary only with salary progression, but decided that it would not address the issue. It is not the purpose of this paper to discuss when the straight-lining adjustment applies.
30. For the example, it is assumed that the straight-lining adjustment does not apply. In the appendix, we illustrate how the reported amounts under IAS 19 and the capped approach would change if the entity applied the straight-lining adjustment.
31. Also, it is assumed that the plan holds the underlying pool of assets. Holding the underlying assets is not a pre-condition to apply to capped approach. In the appendix, we illustrate how the reported amounts would change if the plan held different assets.

32. Finally, it is assumed that the employees receive the full amount as a lumpsum at the end of the period of service. In the appendix, we illustrate how the reported amounts would change, if the terms of the plan require that the account value balance is converted into an annuity at a rate to be set at the end of the service period.
33. The following tables illustrate how the entity would measure the defined benefit obligation and the plan assets over the period of service under IAS 19:

Table 3 – Expected changes in the DBO under IAS 19 (initial scenario)

Year	Opening balance	Service cost	Interest expense	Closing balance
1	-	6,729	-	6,729
2	6,729	6,762	155	13,647
3	13,647	7,195	315	21,157
4	21,157	7,230	489	28,875
5	28,875	7,692	667	37,234
6	37,234	7,730	860	45,823
7	45,823	8,224	1,058	55,105
8	55,105	8,264	1,273	64,642

Table 4 – Expected changes in plan assets under IAS 19 (initial scenario)

Year	Opening balance	Interest income	Excess (deficit) returns	Investment from contributions	Closing balance
1	-			6,000	6,000
2	6,000	139	101	6,129	12,369
3	12,369	286	209	6,629	19,492
4	19,492	450	330	6,771	27,043
5	27,043	625	457	7,323	35,448
6	35,448	819	599	7,480	44,346
7	44,346	1,024	750	8,090	54,210
8	54,210	1,252	916	8,264	64,642

34. As a consequence, the entity would recognise a net pension liability/(asset) over the period of service as follows³.

³ In table 5, and other tables that show the expected changes in the net liability(asset), a positive (negative) opening balance and closing balance indicate a net liability (asset); a positive (negative) amount in the column 'net interest' indicates a net interest charge (income). Contributions paid reduce the net liability and are shown as a negative amount.

Table 5 – Expected changes in the net pension liability/(asset) under IAS 19 (initial scenario)

Year	Opening balance	Service cost	Net interest	Deficit (excess) returns	Contribution paid	Closing balance
1	0	6,729			(6,000)	729
2	729	6,762	17	(101)	(6,129)	1,278
3	1,278	7,195	30	(209)	(6,629)	1,664
4	1,664	7,230	38	(330)	(6,771)	1,832
5	1,832	7,692	42	(457)	(7,323)	1,786
6	1,786	7,730	41	(599)	(7,480)	1,478
7	1,478	8,224	34	(750)	(8,090)	896
8	896	8,264	21	(916)	(8,264)	0

35. The service cost is determined by projecting the contribution for the year at the expected return rate to determine the expected benefit and then discounting the benefit back at the discount rate. In Year 1, the service cost of CU6,729 is determined by projecting 6,000 at 4% over the remaining 7 years and discounting the amount back at 2,31% for the same period. No value is attributed to the guarantee (see paragraphs 64–66 for further discussion of such guarantees).
36. Net interest is determined by applying the discount rate to the opening balance of the net defined benefit liability. Deficit (excess) returns are determined as the difference between the total change in the fair value of the plan assets and the interest income⁴. In the example, this amount is equal to the difference between the expected return rate and the discount rate multiplied by the opening balance of the fair value of the plan assets (as reported on table 4 above).
37. For instance, in Year 8 the opening balance of the net defined liability is equal to the difference of CU896⁵ between the fair value of the opening balance of the plan assets of CU54,210 and the opening balance of the defined benefit obligation of CU55,105. The excess return is equal to the difference between the expected return rate of 4% and discount rate of 2.31% multiplied by CU54,210.

⁴ In the column deficit (excess) returns, a negative (positive) amount means that the total fair value change has exceeded (fallen short of) the interest income. The excess (deficit) causes a reduction (increase) in the net liability.

⁵ Rounded.

38. IAS 19 includes the excess return on the plan assets as part of the remeasurements of the net defined liability (asset). Paragraph 120(c) of IAS 19 requires an entity to recognise this amount in Other Comprehensive Income. The amounts recognised in Other Comprehensive Income are not subsequently recycled to profit or loss.
39. The following tables illustrate how the entity would measure the defined benefit obligation over the period of service under the capped approach:

Table 6 – Expected changes in the DBO under capped approach (initial scenario)

Year	Opening balance	Service cost	Interest expense	True-up	Closing balance
1	-	6,000	-		6,000
2	6,000	6,129	139	101	12,369
3	12,369	6,629	286	209	19,492
4	19,492	6,771	450	330	27,043
5	27,043	7,323	625	457	35,448
6	35,448	7,480	819	599	44,346
7	44,346	8,090	1,024	750	54,210
8	54,210	8,264	1,252	916	64,642

40. In subsequent periods, the defined benefit obligation needs to be adjusted to reflect the difference between the accrued benefit (based on the actual return of 4%) and the benefit originally projected using the capped rate of 2.31%. Paragraphs 58–63 of this paper discusses the presentation of this true up adjustment.
41. There is no change in the amounts recognised in relation to the plan assets.
42. As a consequence, the entity would recognise a net pension liability/(asset) over the period of service as follows under the capped approach.

Table 7 - Expected changes in the net pension liability/(asset) under capped approach (initial scenario)

Year	Opening balance	Service cost	Net interest	Deficit (excess) returns	True up	Contribution paid	Closing balance
1	-	6,000	-			(6,000)	-
2	-	6,129	-	(101)	101	(6,129)	-
3	-	6,629	-	(209)	209	(6,629)	-
4	-	6,771	-	(330)	330	(6,771)	-
5	-	7,323	-	(457)	457	(7,323)	-
6	-	7,480	-	(599)	599	(7,480)	-
7	-	8,090	-	(750)	750	(8,090)	-
8	-	8,264	-	(916)	916	(8,264)	-

43. The service cost in the capped approach is determined by projecting the contribution for the year (eg CU6,000 in Year 1) at the capped rate to determine the expected benefit and then discounting the benefit back at the same rate, therefore resulting in the same amount (eg CU6,000 in Year 1). In this case, the capped rate equals the discount rate because the discount rate is lower than the expected return on the assets.
44. The true up adjustment equals, and exactly offsets, the deficit (excess) returns on the plan assets. As a result, the closing balance of the net defined benefit liability is nil at the end of each year.

Initial scenario with remeasurements

45. The amounts included in the two tables above do not include any remeasurement or revision of the actuarial assumptions. However, it is unrealistic to assume that such remeasurement or revision will occur.
46. The following tables illustrate how the reported amounts change, if at the end of Year 4:
- (a) the actual return for Year 4 is 2% instead of 4%;
 - (b) the entity revises its expected returns for Years 5 to 8 from 4% to 3%; and
 - (c) the entity revises the discount rate from 2.31% to 1.95%.

47. The following tables illustrate how the entity would measure the defined benefit obligation and the plan assets over the period of service under IAS 19:

Table 8 – Revised changes in the DBO under IAS 19 after remeasurement

Year	Opening balance	Service cost	Interest expense	Actuarial loss/(gain)	Closing balance
1	-	6,729	-	-	6,729
2	6,729	6,762	155	-	13,647
3	13,647	7,195	315	-	21,157
4	21,157	7,230	489	(1,107)	27,768
5	27,768	7,551	541	-	35,861
6	35,861	7,635	699	-	44,196
7	44,196	8,173	862	-	53,231
8	53,231	8,264	1,038	-	62,532

Table 9 – Revised changes in the plan assets under IAS 19 after remeasurement

Year	Opening balance	Interest income	Excess (deficit) returns	Investment from contributions	Closing balance
1	-			6,000	6,000
2	6,000	139	101	6,129	12,369
3	12,369	286	209	6,629	19,492
4	19,492	450	(60)	6,771	26,653
5	26,653	520	280	7,323	34,776
6	34,776	678	365	7,480	43,299
7	43,299	844	454	8,090	52,687
8	52,687	1,027	553	8,264	62,532

48. As a consequence, the entity would recognise a net pension liability/(asset) over the period of service as follows.

Table 10 – Revised changes in the net pension liability/(asset) under IAS 19 after remeasurement

Year	Opening balance	Service cost	Net interest	Deficit (excess) returns	Actuarial loss/(gain)	Contribution paid	Closing balance
1	0	6,729				(6,000)	729
2	729	6,762	17	(101)		(6,129)	1,278
3	1,278	7,195	30	(209)		(6,629)	1,664
4	1,664	7,230	38	60	(1,107)	(6,771)	1,115
5	1,115	7,551	22	(280)		(7,323)	1,086
6	1,086	7,635	21	(365)		(7,480)	896
7	896	8,173	17	(455)		(8,090)	543
8	543	8,264	11	(553)		(8,264)	-

49. The service cost and net interest in Year 4 are not affected, because they are determined using the assumptions at the beginning of the period. The entity would recognise a deficit return of CU60 as the difference between the actual return of 2% and the interest income calculated using the discount rate of 2.31% at the beginning of the period.
50. The entity would also recognise an actuarial gain of CU1,107 - mostly driven by the revised expected returns that result in lower projected benefits at the end of the period of service. This decrease in projected benefits also causes the lower service cost in Years 5 to 8.
51. The following table illustrates how the net defined benefit liability would change over the period of service and the amounts that the employer would recognise under the capped approach.

Table 11 – Revised changes in the net pension liability/(asset) under the capped approach after remeasurement

Year	Opening balance	Service cost	Net interest	Deficit (excess) returns	True up	Contribution paid	Closing balance
1	-	6,000	-			(6,000)	-
2	-	6,129	-	(101)	101	(6,129)	-
3	-	6,629	-	(209)	209	(6,629)	-
4	-	6,771	-	60	(60)	(6,771)	-
5	-	7,323	-	(280)	280	(7,323)	-
6	-	7,480	-	(365)	365	(7,480)	-
7	-	8,090	-	(455)	455	(8,090)	-
8	-	8,264	-	(553)	553	(8,264)	-

52. Under the capped approach, the entity would recognise in Year 4 the same deficit return explained in paragraph 49 above. As in the original calculation, the entity would also recognise a negative true up adjustment of the same amount.
53. Excess returns and true up adjustments are lower than the original calculation in Years 5 to 8. This is because in the original calculation they were based on the difference between the original expected return of 4% and the original discount rate of 2.31%; after the revision, these amounts are based on the difference between a revised expected return of 3% and a revised discount rate of 1.95%.

Analysis of the outcome

54. The purpose of the capped approach is to address the internal inconsistency in the measurement of a defined benefit obligation when the benefits vary with asset returns.
55. The capped approach results in the entity reporting no net defined liability or asset in the fact patterns illustrated above, if the following conditions are met:
- (a) the asset returns are expected to exceed the minimum return guarantee;
 - (b) the plan holds the underlying assets;
 - (c) there are no vesting conditions (or the vesting conditions are fully met);
- and

- (d) the entity is not required to apply the straight-lining adjustment.
56. The staff believe that under these conditions this outcome provides more relevant information and a more faithful representation of the entity's net obligation than the amount determined by applying IFRS 19, since the entity is not expected to make additional payments in relation to the services received in the current and past periods. Having said that, neither IAS 19 nor the capped approach attribute any value to an out-of-the-money minimum guarantee. It is beyond the scope of this project to consider whether attributing any value to such guarantees would provide more relevant information and a more faithful representation of the entity's net obligation.
57. One advantage of the capped approach is that a revision of the expected returns or the discount rate does not affect the measurement, to the extent that the discount rate continues being lower than the expected returns.

Presentation of the true up adjustment

58. As noted above, when applying the capped approach the benefit accrued in each year of service is initially determined by applying the discount rate, rather than the expected return rate. In following years, it is necessary to adjust the measurement of the defined benefit obligation to reflect the difference between the actual returns and the original estimation. In the example above:
- (a) At the end of Year 1, the employer estimates the ultimate cost of the benefits that the employee has earned for the services rendered in Year 1 by projecting the amount of CU6,000 at the discount rate of 2.31% until the end of the period of service, and discounting the result back at the same discount rate;
- (b) At the end of Year 2, the employer adjusts the defined benefit obligation by an amount equal to the opening balance of the defined benefit obligation multiplied by the difference between the actual rate of return in Year 2 (in the example 4%) and the discount rate used in the original

projection⁶. This adjustment reflects the eventually the measurement of the benefit must reflect the actual return on the underlying pool of assets.

59. The staff have not yet concluded whether it would be preferable to present the true up adjustment in profit or loss or in other comprehensive income.
60. The arguments to present the true up adjustment in profit or loss are presented in the next paragraphs.
61. Firstly, paragraph 127 of IAS 19 requires an entity to present the following components of defined benefit cost in other comprehensive income:
 - (a) actuarial gains and losses;
 - (b) the return on plan assets, excluding the amount included in the net interest; and
 - (c) any change in the effect of the asset ceiling, excluding amounts included in the net interest.
61. The nature of the true up adjustment is different from these components. The true up adjustment does not arise from a change in the actuarial assumptions.
62. Secondly, the true up adjustment is determined by the actual return in the current period and is not subject to further remeasurement.
63. The arguments to present the true up adjustment in other comprehensive income are:
 - (a) the true up adjustment is similar in nature to the deficit (excess) returns on the plan assets and, indeed, is determined by them. This latter is presented in other comprehensive income;
 - (b) it may add complexity to separate the true up adjustment from actuarial gains and losses arising from revision of assumptions such as employee turnover or reassessment of vesting conditions.

⁶ CU6,000 * (4% - 2.31%) = CU101.

Recognition and measurement of the minimum guarantee

64. In the example, it is assumed that the actual returns on the asset always exceed the minimum guaranteed return. Even under this assumption, it could be argued that the minimum guarantee has a value that should be incorporated in the measurement of the defined benefit obligation.
65. It is beyond the scope of this project to consider how to account for a minimum guarantee.
66. IAS 19 requires an entity to make a reliable estimate of the ultimate cost to the entity of the benefit that employees have earned in return for their service in current and prior periods. In doing so, an entity is required to use the best estimates of the variables that will determine the ultimate cost to provide the benefits, including the benefit levels. IAS 19 is silent about whether an entity's estimate of the benefits should attribute a value to a minimum guarantee that is out of the money because the estimated future returns on underlying assets are lower than the minimum guarantee.
67. Measurements that attempt to capture the full economic value of an obligation—for example fair value, or the fulfilment value required by IFRS 17 for insurance contracts—generally do attribute value to such guarantees, even when they are out of the money.

Next steps

68. The staff is currently updating the data that was presented in November 2015 on global trends in pensions. The data may help the Board to assess the extent of the effect of adopting the capped approach on plans that exist now.
69. The staff plan to bring an initial analysis of how the capped approach could be introduced in IAS 19 in terms of scope and changes in existing requirements. We plan to present the analysis in early 2021.

Question to the Board

1. Do Board members have questions on this paper?
2. Are there other fact patterns that the Board recommend the staff to investigate to assess whether the capped approach could have unintended consequences?
3. Do Board members have initial views on the presentation of the true-up adjustment? (paragraph 58–63)

APPENDIX 1

- A1. In the appendix, we will introduce some changes to the initial fact pattern. We will illustrate the impact of each of the following changes:
- a. the entity applies the straight-lining adjustment as per paragraph 70 of IAS 19;
 - b. the plan holds assets other than the underlying assets; and
 - c. the benefits at the end of the period of service will be converted into an annuity at a fixed rate that will be based on the market rates current at the date of conversion.

Applying the straight-lining adjustment

- A2. In this version of the example, the entity allocates the total benefits expected at the end of the period of service on a straight-line basis, rather than following the plan contribution formula. In Year 1, the entity would determine the service cost as follows:
- a. project the total benefits (CU64,642 – see table 2 above);
 - b. divide the total benefits by 8 to determine the amount allocated to each period (CU8,080);
 - c. discount that amount back by using the discount rate of 2.31%.
- A3. As a consequence, the service cost in earlier years is higher than reported in the original version, and lower in later years.
- A4. The following table illustrates how the entity would measure the defined benefit obligation over the period of service under IAS 19:

Table 12 – Expected changes in the DBO under IAS 19 (with straight-lining adjustment)

Year	Opening balance	Service cost	Interest expense	Closing balance
1	-	6,887	-	6,887
2	6,887	7,046	159	14,091
3	14,091	7,208	325	21,625
4	21,625	7,375	499	29,500
5	29,500	7,545	681	37,726
6	37,726	7,720	871	46,317
7	46,317	7,898	1,070	55,285
8	55,285	8,080	1,277	64,642

- A5. There is no change in the amounts recognised in relation to the plan assets compared to table 4 above.
- A6. As a consequence, the entity would recognise a net pension liability/(asset) over the period of service as follows:

Table 13 - Expected changes in the net pension liability/(asset) under IAS 19 (with straight-lining adjustment)

Year	Opening balance	Service cost	Net interest	Deficit (excess) returns	Contribution paid	Closing balance
1		6,887			(6,000)	887
2	887	7,046	20	(101)	(6,129)	1,722
3	1,722	7,208	40	(209)	(6,629)	2,133
4	2,133	7,375	49	(330)	(6,771)	2,457
5	2,457	7,545	57	(457)	(7,323)	2,279
6	2,279	7,720	53	(599)	(7,480)	1,971
7	1,971	7,898	46	(750)	(8,090)	1,075
8	1,075	8,080	25	(916)	(8,264)	-

- A7. The straight-lining adjustment results in an increased net defined benefit liability during the period of service. The difference is reversed in later years and at the end of Year 8 there is no net defined benefit asset or liability.
- A8. The following table illustrates how the entity would measure the defined benefit obligation over the period of service under the capped approach:

Table 14 – Expected changes in the DBO under the capped approach (with straight-lining adjustment)

Year	Opening balance	Service cost	Interest expense	True-up	Closing balance
1	-	6,513	-		6,513
2	6,513	6,676	150	13	13,351
3	13,351	6,856	308	52	20,568
4	20,568	7,055	475	124	28,222
5	28,222	7,276	652	229	36,378
6	36,378	7,519	840	375	45,111
7	45,111	7,786	1,042	562	54,501
8	54,501	8,080	1,259	802	64,642

A9. As a consequence, the entity would recognise a net pension liability/(asset) over the period of service as follows.

Table 15 - Expected changes in the net pension liability/(asset) under the capped approach (with straight-lining adjustment)

Year	Opening balance	Service cost	Net interest	Deficit (excess) returns	True up	Contribution paid	Closing balance
1	-	6,513				(6,000)	513
2	513	6,676	12	(101)	13	(6,129)	982
3	982	6,856	23	(209)	52	(6,629)	1,076
4	1,076	7,055	25	(330)	124	(6,771)	1,179
5	1,179	7,276	27	(457)	229	(7,323)	930
6	930	7,519	21	(599)	375	(7,480)	765
7	765	7,786	18	(750)	562	(8,090)	291
8	291	8,080	7	(916)	802	(8,264)	-

A10. When the entity applies the straight-lining adjustment, the capped approach results in the recognition of a net defined benefit liability. In Year 1, the entity would determine the service cost as follows:

- a. project the total benefits using the capped rate (CU61,130);
- b. divide the total benefits by 8 to determine the portion allocated to each period (CU7,641);
- c. discount that amount back by using the discount rate of 2.31%.

- A11. The resulting service cost exceeds the contribution paid and results in a net defined benefit liability.
- A12. The capped approach still results in a reduction of the net defined benefit liability in comparison with the result of applying IAS 19. The impact of the reduction depends on the fact pattern. The difference between the capped approach and existing IAS 19 is significantly impacted by the following:
- a. how large the expected asset returns are relative to the expected account value at the end of the service period; and
 - b. the difference between the expected returns and the discount rate.
- A13. In the example, the capped approach would reduce the net liability by between 42% and 73% compared with the result of applying IAS 19. The difference in absolute terms increases progressively from Year 1 to Year 5 and then starts decreasing, while the difference in absolute terms is highest at the end of Year 7.

Holding assets other than the underlying assets

- A14. As noted above, the purpose of the capped approach is to target the internal inconsistency within the measurement of the DBO when benefits vary with asset returns. For this reason, the capped approach might be applied regardless of whether the plan holds the underlying assets, or indeed any assets.
- A15. Not holding the underlying assets changes the nature of the employer's investment risk exposure. If the plan holds the underlying assets, the employer is exposed to the risk that the actual returns fall short of the minimum guarantee and the employer has no upside potential; if the plan does not hold the assets, the employer is exposed to the risk that actual returns fall short of the returns on the underlying assets (even if the actual returns exceed the minimum guarantee) and there is a possible upside potential.
- A16. This version of the example assumes that the plan holds assets other than the underlying assets. The assets held are expected to return 3% p.a. As a consequence, the fair value of the plan assets is projected to be CU62,537 with a projected deficit of CU2,105 at the end of the period of service.

A17. The following table illustrates how the entity would measure the plan assets over the period of service:

Table 16 – Expected changes in the plan assets (different portfolio)

Year	Opening balance	Interest income	Excess (deficit) returns	Investment from contributions	Closing balance
1	-			6,000	6,000
2	6,000	139	41	6,129	12,309
3	12,309	284	85	6,629	19,307
4	19,307	446	133	6,771	26,657
5	26,657	616	184	7,323	34,780
6	34,780	803	240	7,480	43,303
7	43,303	1,000	299	8,090	52,692
8	52,692	1,217	364	8,264	62,537

A18. There is no change in the amounts recognised in relation to the defined benefit obligation compared to table 3 above.

A19. As a consequence, the entity would recognise a net pension liability/(asset) over the period of service under IAS 19 as follows.

Table 17 – Expected changes in the net pension liability/(asset) under IAS 19 (different portfolio)

Year	Opening balance	Service cost	Net interest	Deficit (excess) returns	Contribution paid	Closing balance
1	-	6,729			(6,000)	729
2	729	6,762	17	(41)	(6,129)	1,338
3	1,338	7,195	31	(85)	(6,629)	1,850
4	1,850	7,230	43	(133)	(6,771)	2,218
5	2,218	7,692	51	(184)	(7,323)	2,454
6	2,454	7,730	57	(240)	(7,480)	2,520
7	2,520	8,224	58	(299)	(8,090)	2,413
8	2,413	8,264	56	(364)	(8,264)	2,105

A20. Under the capped approach, the entity would recognise the defined benefit obligation as per table 6 above and the plan assets as per table 16 above. As a consequence, the entity would recognise a net pension liability/(asset) over the period of service as follows.

Table 18 – Expected changes in the net pension liability/(asset) under the capped approach (different portfolio)

Year	Opening balance	Service cost	Net interest	Deficit (excess) returns	True up	Contribution paid	Closing balance
1	-	6,000				(6,000)	-
2	-	6,129	-	(41)	101	(6,129)	60
3	60	6,629	1	(85)	209	(6,629)	185
4	185	6,771	4	(133)	330	(6,771)	386
5	386	7,323	9	(184)	457	(7,323)	668
6	668	7,480	15	(240)	599	(7,480)	1,043
7	1,043	8,090	24	(299)	750	(8,090)	1,517
8	1,517	8,264	35	(364)	916	(8,264)	2,105

A21. Compared to the original fact pattern illustrated in paragraph 39 above, the fair value of the plan assets is lower, and a net defined benefit liability arises.

Conversion into an annuity

A22. Plans often pay the benefits as an annuity or offer a conversion option to the employees. The inclusion of a conversion option introduces (or increases) a longevity risk for the plan.

A23. This version of the example introduces the following assumptions in addition to those illustrated in paragraph 18:

- a. at the end of the period of service, the account value will be converted into an annuity payment. The conversion will be determined using an interest rate to be fixed at the date of conversion and currently expected to 1.5%;
- b. the annuity is paid over a fixed period of 4 years.

A24. At the beginning of the period of service, the entity therefore estimates the ultimate costs of the benefits using a 4% p.a. rate for the first 8 years (the expected return rate) and the currently expected 1.5% p.a. rate for the payment period in years 9 to 12 (the expected interest rate at the date of conversion). To keep this fact pattern simple, it assumes that the entity uses a single estimate for the discount rate over the whole service and payment period.

- A25. Because the annuity rate is fixed, it is possible that the plan will generate a surplus in the payment period. This is different from what happens during the period of service, where the plan pays a ‘higher of’ benefit and therefore it could not generate a surplus for the employer (but it could be in a deficit position). In the example, the staff selected the returns on the plan assets during the payment period of 2% in Year 9, 1.5% in Year 10, 1% in Year 11 and 0.4% in Year 12. The staff selected these returns so that they cumulatively match the annuity rate over the whole payment period and as a consequence the plan’s final net position is nil.
- A26. On the basis of the assumptions the following table illustrates how the account value and the fair value of the plan assets are expected to change over the period of service and payment period.

Table 19 – Expected changes in account value (annuity conversion)

Account value				
Opening	Return	Contribution	Annuity paid	Closing
-		6,000		6,000
6,000	240	6,129		12,369
12,369	495	6,629		19,492
19,492	780	6,771		27,043
27,043	1,082	7,323		35,448
35,448	1,418	7,480		44,346
44,346	1,774	8,090		54,210
54,210	2,168	8,264		64,642
64,642	970		(16,771)	48,840
48,840	733		(16,771)	32,802
32,802	492		(16,771)	16,523
16,523	248		(16,771)	-

Table 20 – Expected changes in plan assets (annuity conversion)

Plan assets				
Opening	Change in fair value	Contribution	Annuity paid	Closing
-		6,000		6,000
6,000	240	6,129		12,369
12,369	495	6,629		19,492
19,492	780	6,771		27,043
27,043	1,082	7,323		35,448
35,448	1,418	7,480		44,346
44,346	1,774	8,090		54,210
54,210	2,168	8,264		64,642
64,642	1,308		(16,771)	49,179
49,179	737		(16,771)	33,144
33,144	323		(16,771)	16,696
16,696	75		(16,771)	-

- A27. Because the annuity rate and the expected return rate are different in each year in the payment period, the account value diverges from the projection of the fair value of the plan assets at the end of Year 9, 10 and 11. However, the expected returns have been assumed to cumulatively match the annuity rate over the whole payment period and at the end of the payment period the net position is nil. Were the returns lower, the entity would need to pay additional contributions; were the returns higher, the plan assets would be positive at the end of the payment period and the entity would receive the balance.
- A28. The following tables illustrate how the entity would measure the defined benefit obligation and plan assets over the period of service under IAS 19⁷. Service costs is recognised only until the end of the period of service.

⁷ The payment of the annuities reduces both the obligation and the plan assets by the same amount and does not impact the net position.

Table 21 – Expected changes in the DBO under IAS 19 (annuity conversion)

Year	Opening balance	Service cost	Interest expense	Benefits paid	Closing balance
1	-	6,598	-		6,598
2	6,598	6,631	152		13,381
3	13,381	7,054	309		20,745
4	20,745	7,089	479		28,313
5	28,313	7,542	654		36,509
6	36,509	7,579	843		44,931
7	44,931	8,063	1,038		54,032
8	54,032	8,103	1,248		63,383
9	63,383		1,464	(16,771)	48,075
10	48,075		1,110	(16,771)	32,415
11	32,415		749	(16,771)	16,392
12	16,392		379	(16,771)	-

Table 22 – Expected changes in the plan assets under IAS 19 (annuity conversion)

Year	Opening balance	Interest income	Excess (deficit) returns	Investment from contributions	Benefits paid	Closing balance
1	-			6,000		6,000
2	6,000	139	101	6,129		12,369
3	12,369	286	209	6,629		19,492
4	19,492	450	330	6,771		27,043
5	27,043	625	457	7,323		35,448
6	35,448	819	599	7,480		44,346
7	44,346	1,024	750	8,090		54,210
8	54,210	1,252	916	8,264		64,642
9	64,642	1,493	(185)		(16,771)	49,179
10	49,179	1,136	(399)		(16,771)	33,144
11	33,144	765	(443)		(16,771)	16,696
12	16,696	386	(311)		(16,771)	-

A29. As a consequence, the entity would recognise a net pension liability/(asset) over the period of service as follows.

Table 23 – Expected changes in the net pension liability/(asset) under IAS 19 (annuity conversion)

Year	Opening balance	Service cost	Net interest	Deficit (excess) returns	Contribution paid	Closing balance
1	-	6,598			(6,000)	598
2	598	6,631	14	(101)	(6,129)	1,012
3	1,012	7,054	23	(209)	(6,629)	1,252
4	1,252	7,089	29	(330)	(6,771)	1,270
5	1,270	7,542	29	(457)	(7,323)	1,061
6	1,061	7,579	25	(599)	(7,480)	585
7	585	8,063	14	(750)	(8,090)	(178)
8	(178)	8,103	(4)	(916)	(8,264)	(1,259)
9	(1,259)		(29)	185		(1,103)
10	(1,103)		(25)	399		(730)
11	(730)		(17)	443		(304)
12	(304)		(7)	311		-

- A30. The service cost is determined as follows:
- a. the contribution for the year is projected at the expected return rate to determine the expected benefit at the end of the service period (end of Year 8);
 - b. the expected benefit is translated into an expected annuity, taking into consideration the length of the payment period and an estimate of the interest rate to be fixed at the date of conversion;
 - c. the annuity is discounted back using the discount rate.
- A31. In the fact pattern, the contribution for Year 1 of CU6,000 is estimated to result in a benefit of CU7,896 LC at the end of the service period (end of Year 8). The benefit of CU7,896 is translated into an expected annuity to be paid in equal instalments in four years at a 1.5% interest rate. The total annuity is estimated to be equal to CU8,194, resulting in an annual payment of CU2,048. The present value of the four payments discounted at the rate of 2.31% results in a service cost of CU6,598 for Year 1.
- A32. The plan would show a net defined benefit asset between Year 7 and Year 11. This occurs because in the payment period the benefits accumulate using the estimated annuity rate of 1.5%, which is lower than the discount rate (the staff have not

considered whether it is realistic to use a discount rate for Years 9–12 that is significantly different from the expected annuity rate. The fact pattern includes that difference to illustrate the effect).

A33. The following table illustrates how the entity would measure the defined benefit obligation over the period of service under the capped approach:

Table 24 – Expected changes in the DBO under the capped approach (annuity conversion)

Year	Opening balance	Service cost	Interest expense	True up	Benefits paid	Closing balance
1	-	5,883	-			5,883
2	5,883	6,010	136	99		12,128
3	12,128	6,499	280	205		19,113
4	19,113	6,639	441	323		26,516
5	26,516	7,180	612	448		34,757
6	34,757	7,335	803	588		43,482
7	43,482	7,932	1,004	735		53,154
8	53,154	8,103	1,228	899		63,383
9	63,383		1,464		(16,771)	48,075
10	48,075		1,110		(16,771)	32,415
11	32,415		749		(16,771)	16,392
12	16,392		379		(16,771)	-

A34. There is no change in the amounts recognised in relation to the plan assets compared to table 22 above.

A35. As a consequence, the entity would recognise a net pension liability/(asset) over the period of service as follows.

Table 25 – Expected changes in the net pension liability/(asset) under the capped approach (annuity conversion)

Year	Opening balance	Service cost	Net interest	Deficit (excess) returns	True up	Contribution paid	Closing balance
1	-	5,883				(6,000)	(117)
2	(117)	6,010	(3)	(101)	99	(6,129)	(241)
3	(241)	6,499	(6)	(209)	205	(6,629)	(380)
4	(380)	6,639	(9)	(330)	323	(6,771)	(527)
5	(527)	7,180	(12)	(457)	448	(7,323)	(691)
6	(691)	7,335	(16)	(599)	588	(7,480)	(864)
7	(864)	7,932	(20)	(750)	735	(8,090)	(1,056)
8	(1,056)	8,103	(24)	(916)	899	(8,264)	(1,259)
9	(1,259)		(29)	185			(1,103)
10	(1,103)		(25)	399			(730)
11	(730)		(17)	443			(304)
12	(304)		(7)	311			-

A36. Under the capped approach, the contribution is projected using the discount rate of 2.31% instead of the expected return rate. In the fact pattern, the contribution for Year 1 of CU6,000 is estimated to result in a benefit of CU7,040 at the end of the service period. The benefit of CU7,040 is translated into an expected annuity to be paid in equal instalments in four years at a 1.5% interest rate. The total annuity is currently estimated to equal CU7,306, resulting in an annual payment of CU1,826. The present value of the four payments discounted at the rate of 2.31% results in a service cost of CU5,883.

A37. The difference in the service cost compared to the amounts recognised under IAS19 affects the net defined liability/asset and therefore the net interest. As discussed in paragraph 40 above, the capped approach requires a true-up adjustment to be recognised in subsequent periods during the service period. There is no true up adjustment during the payment period because in this fact pattern the benefits no longer vary with the asset returns.