

IASB
30 Cannon Street
London EC4M 6XH
UK

26 September 2008

Pension Plan Research Group, Japan
Masaaki ONO Tomoyuki KUBO
Nobuhiro SHIMIZU Ryo MATSUBARA
Mitsuhiro TANIGUCHI Kenji SEKINE
Yoshihiro INODA Masaharu USUKI

Comments on the IAS Discussion Paper "Preliminary views on amendments to IAS 19 Employee Benefits"

Dear Sir/Madam,

We welcome the opportunity to provide you of our comments on the Discussion Paper "Preliminary Views on Amendments to IAS 19 Employee Benefits".

In advance to present our comments on each question in the Paper, we would like to place some of our basic ideas on the accounting principles of post-employment benefit promises.

* All benefit formulae in various promises, no matter whether it is a DB-type promise, a so-called Hybrid-type promise or a "pure" DC-type promise, can be integrated under the concept of "Accumulation" and "Revaluation". The following is a brief explanation of the concept.

There are three phases for each participant, which are accumulation (service) phase, deferment phase, and payout phase. The amount of benefit for a participant is expressed by the below formula.

$$B_{x_c} = \sum_{x_e}^{x_w} S_x \cdot P_x \cdot I(x, x_w) \cdot J(x_w, x_r) \cdot K(x_r, x_c)$$

This formula means that the amount of benefit is the accumulation of each $S_x \cdot P_x$ at age x , revaluated by the factor $I(x, x_w) \cdot J(x_w, x_r) \cdot K(x_r, x_c)$.

The revaluation factor $I(x, x_w) \cdot J(x_w, x_r) \cdot K(x_r, x_c)$ can be expressed as

$\exp\left(\int_{x_e}^{x_w} \eta_x dx + \int_{x_w}^{x_r} \iota_x dx + \int_{x_r}^{x_c} \kappa_x dx\right)$, where η_x , ι_x , κ_x are the revaluation rates for each phase.

If the benefit promise were Cash Balance-type, $S_x \cdot P_x$ would be the pay credit at age x , and η_x , ι_x would be the interest credit rates during the accumulation and deferment phase respectively.

If the benefit promise were Final Salary Lump-sum-type, P_x would be the rate of accrual, and η_x would be the salary increase rate at age x .

If the benefit promise were DC-type, P_x would be the contribution rate, and η_x would be the actual rate of return on assets.

The amount of benefit might vary depending on the conditions with regard to the status of participants. For instance, in a traditional US final salary plan, where η_x would be the salary increase rate and ι_x be zero, the amount of benefit may depend on the age of separation x_w . Vesting factors may also affect the amount of benefit. For further detail, please refer to Appendix.

* In order to prevent accounting arbitrages, Measurements and Recognitions for various economic transactions and resulting Assets and Liabilities should be consistent each other. In this paper, the term "accounting arbitrage" refers to the economic practice of taking advantage of a differential caused by accounting rules. Although accounting standards should aim to fairly reflect the financial status of entities, it seems to us that some proposals in the Discussion Papers would generate accounting disparities which unnecessarily leads entities to certain direction.

* Measurement of liabilities should be based on the risk neutral measurement approach. We suggest that it would be useful for the Board to consider some knowledge commonly recognised in the field of finance.

1 Question 1

Given the objective of the IASB project to address specific issues in a limited time frame, are there additional issues which you think should be addressed by the Board as part of this project? If so, why do you regard these issues as a matter of priority?

1.1 As we note in Appendix, all benefit formulae of post-employment benefit promises can be integrated under the concept of "Accumulation" and "Revaluation". From this integrated perspective, we cannot find any rationale for introducing new criteria for benefit promises and extracting only the salary risk and treating it differently from other risks. We strongly

believe that the Board should address the issues of measuring liabilities for all types of benefit promises comprehensively. Limiting the scope of the project will generate inconsistencies within IAS19 that will result in accounting arbitrages.

- 1.2 We fully understand that the issues of measuring liabilities with regard to non-traditional DB plans had been discussed in FASB for many years. The issues were transferred to IASB, but the situation seems to have been almost the same. Many attempts had been proposed and failed. In spite of the history of failures, IASB have to review the measurement issues comprehensively within a reasonable time period. Leaving the issues may further aggravate the current problems and make it much harder to find comprehensive and consistent solutions afterwards.

2 Question 2

Are there factors that the Board has not considered in arriving at its preliminary views? If so, what are those factors? Do those factors provide sufficient reason for the Board to reconsider its preliminary views? If so, why?

- 2.1 Adequacy of eliminating deferred recognition should be addressed in the context of Business Reporting. We again emphasize that consistencies within the accounting standards on post-employment benefit promises and across the accounting standards on other economic transactions will be essential, especially in recognition, measurement, and reporting in the comprehensive income.
- 2.2 We do not intend to insist that the accounting for post-employment benefit promises should have special considerations. However, we strongly believe that it should be consistent with the accountings of other liabilities with similar duration and uncertainties to post-employment benefit promises. If the post-employment benefit promises should be recognized and measured as debt, other liabilities with similar characteristics should be treated likewise in both asset and liability side of the entity's balance sheet.

3 Question 3

- (a) Which approach to the measurement of changes in defined benefit costs provides the most useful information to users of financial statements? Why?
- (b) In assessing the usefulness of information to users, what importance do you attach to each of the following factors, and why?

- (i) presentation of some components of defined benefit cost in other comprehensive income; and
 - (ii) disaggregation of information about fair value?
- (c) What would be the difficulties in applying each of the presentation approaches?

3.1 As we noted in the comments on Question 2, most appropriate approach to the measurement of changes should be determined with reference to the comprehensive review of Business Reporting. There must be similar issues in economic transactions to post-employment promises, which would be exposed to fluctuations in asset prices in the capital markets, the market interest rates, and the currency exchange rates. Although we do not believe that the accounting for post-employment benefit promises should be given special treatments, it is undesirable to retain such differences among the accountings for various economic transactions that may cause accounting arbitrage.

3.2 As comprehensive income supersedes traditional profits and losses as a major statement in Business Reporting, it will be beneficial for users of financial statements to disaggregate changes in the post-employment benefit obligations and in the value of plan assets into components attributable to operating income, financial income, etc, than presenting all of the changes in profit or loss. The same holds for contribution-based promises.

4 Question 4

- (a) How could the Board improve the approaches discussed in the paper to provide more useful information to users of financial statements?
- (b) Please explain any alternative approach to presentation that provides more useful information to users of financial statements. In what way does your approach provide more useful information to users of financial statements?

4.1 No comments

5 Question 5

Do you agree that the Board has identified the appropriate promises to be addressed in the scope of the project? If not, which promises should be included or excluded from the scope of the project? Why?

5.1 No. As we note in Appendix, all benefit formulae in various promises can be integrated under the concept of “Accumulation” and “Revaluation”. Therefore, there is no rational ground for excluding defined benefit promises from the scope of the project. Defined benefit promises

(including final salary promises) and defined contribution promises should be included in the scope.

- 5.2 As we noted at the beginning of the comments, there are three phases for each participant, which are accumulation (service) phase, deferment phase, and payout phase. The amount of benefit will be expressed by the below formula.

$$B_{x_c} = \sum_{x_e}^{x_w} S_x \cdot P_x \cdot I(x, x_w) \cdot J(x_w, x_r) \cdot K(x_r, x_c)$$

This formula means that benefit is expressed as the accumulation of each $S_x \cdot P_x$ revaluated by $I(x, x_w) \cdot J(x_w, x_r) \cdot K(x_r, x_c)$.

$I(x, x_w) \cdot J(x_w, x_r) \cdot K(x_r, x_c)$ would be expressed as $\exp\left(\int_{x_e}^{x_w} \eta_x dx + \int_{x_w}^{x_r} \iota_x dx + \int_{x_r}^{x_c} \kappa_x dx\right)$, where

$\eta_x, \iota_x, \kappa_x$ are the revaluation (indexation) rates for each phase.

If the promise were Cash Balance-type, $S_x \cdot P_x$ would be the pay credit at age x , and η_x, ι_x would be the interest credit rates during the accumulation and the deferment phase respectively.

If the promise were Final Salary Lump-sum type, P_x would be the rate of accrual, and η_x would be the salary increase rate at age x .

If the promise were Defined Contribution type, P_x would be the contribution rate, and η_x would be the actual rate of return on assets.

- 5.3 The amount of benefit might vary depending on the conditions with regard to the status of the participant. For instance, in a traditional US final salary plans, where η_x would be the salary increase rates and ι_x be zero, the amount of benefit may depend on the age of separation x_w . Vesting factors also affect the amount of benefit.

- 5.4 The discussion above means that, in order to measure post-employment benefits promises, we should evaluate revaluation factors for various plans and take the status of the participant and the sponsoring entity into account. In this context, there are no rational grounds where only the salary risk is treated differently in the measurement of post-employment benefit promises.

6 Question 6

Would many promises be reclassified from defined benefit to contribution-based under the proposals? What are the practical difficulties, if any, facing entities affected by these proposals?

- 6.1 We note some practical difficulties. For example, consider a final n-year average salary promise. If $n = 1$, the promise is a final salary promise, so it is classified to defined benefit. If $n = 40$ (for instance), the promise is a career average promise, so it is classified to contribution-based. Then, if $n = 20$, the promise is, for an employee younger than $x = (\text{normal retirement age} - 20)$, the promise should be classified to defined benefit. But for an employee older or equal to x , the promise should be classified to contribution-based.
- 6.2 Another example is a weighted career average salary promise. In the case of equally weighted average, the promise becomes a simple career average promise and is classified to contribution-based. But if the weights are slightly different, the promise is classified to defined benefit.
- 6.3 One more example is a cash balance-type promise. In Japan, the interest credit rates may be linked to Wage Index. In such a case, should the promise be classified to defined benefit or contribution-based?
- 6.4 The above examples show that there is no clear and conceptual distinction between contribution-based promises and defined benefit promises, contrary to the Board's observation in 5.47 of the discussion paper.

7 Question 7

Do the proposals achieve that goal? If not, why not?
--

- 7.1 We do not oppose to the intention of the Board not to change current accountings for promises that meet the definition of defined contribution plans in IAS19. However, it is indispensable to revisit the method of straight-line attribution for defined benefit promises to keep consistency between the attribution concept of DB promises and that of DC promises. For example, if an entity promises to contribute 5% of salary to each employee's defined contribution account every year and additional 50% only for the year in which the employee reaches age 55, current accounting for this DC plan is inconsistent with the straight-line attribution for defined benefit plans prescribed in current IAS 19.

8 Question 8

Do you have any comments on those preliminary views? If so, what are they?
--

- 8.1 No comments.

9 Question 9

- (a) Are there alternative measurement approaches that better meet the measurement objectives described in this paper? Please describe the approaches and explain how they better meet the measurement objectives.
- (b) To what extent should the effect of risk be included as a component of the measurement approach at this stage of the Board's post-employment benefit promises project? How should this be done?

9.1 The risk neutral measurement approach better meets the measurement objectives of obtaining fair values. It seems to us that the Board has not explicitly considered several knowledge of finance commonly recognised in the field of finance.

9.2 In the risk neutral approach, firstly, the probability distribution used for estimating the cash flows (in the actual world) is replaced by the so-called risk neutral probability distribution. Secondly, the measurement process (a) and (b) in ITC 11 are applied, with simply replacing the words "probability-weighted" by "risk-neutral probability-weighted". The measurement process (c) is not needed anymore.

9.3 The risk neutral probability distribution of asset returns is obtained by simply shifting (in parallel) the actual probability distribution of the said asset returns to make the expected return equal to the current risk free rate. Other probability distribution should be adjusted in order to keep consistency with the risk neutral distribution of asset returns.

9.4 The risk neutral approach is also applicable to defined benefit promises in the Board's classification of post-employment benefit promises. In the measurement of defined benefit promises, future cash flows are probability-weighted estimates (i.e. best estimates) in the actual world (i.e. not in the corresponding risk-neutral world). The expected cash flows thus obtained are discounted using AA corporate bond rates with the same period of maturity. However, the common knowledge of finance tells us that this calculation does not give us the correct fair value of the liability concerned. Therefore, the Board's intention to preserve the present measurement of defined-based promises is theoretically not consistent with the proposal of fair value measurement of the contribution-based promises.

10 Question 10

- (a) Do you agree that the liability for benefits in the payout and deferment phases should be measured in the same way as they are in the accumulation phase? If not, why?

- (b) What are the practical difficulties, if any, of measuring the liability for a contribution-based promise during the payout phase at fair value assuming the terms of the benefit promise do not change?

10.1 One basic principle is that economically identical promises should be accounted for in the same way, as the discussion paper states 5.28. In payout phase, there is no difference between defined benefit promises and contribution-based promises. And the unit of account should be the promise made to the employee, as stated in 5.5 of the discussion paper. Then, there is no rational reason for treating defined benefit promises in payout phase differently from contribution-based promises.

10.2 As the paper states in 8.9, there should be consistency of accounting for an obligation throughout its life. The contradiction that the discussion paper points out in 8.8 indicates clearly that the limited scope of this project will place an obstacle hard to overcome, and as a result, the project will not produce any sustainable solutions.

11 Question 11

- (a) What level of disaggregation of information about changes in the liability for contribution-based promises is useful to users of financial statements? Why?
- (b) Do you agree that it is difficult to disaggregate changes in the contribution-based promise liability into components similar to those required for defined benefit promises? If not, why not?

11.1 We have made clear the inappropriateness of the proposed classification into defined benefit promises and contribution-based promises. Regardless of the classification, it would be useful to users of financial statements if changes in the liability were disaggregated into components with the same level of the current IAS 19.

12 Question 12

Should changes in the liability for contribution-based promises:

- (a) be presented in profit or loss, along with all changes in the value of any plan assets; or
- (b) mirror the presentation of changes in the liability for defined benefit promises (see Chapter 3)? Why?

12.1 For the sake of preventing accounting inconsistency within and across the standards and resulting accounting arbitrages, comprehensive review is absolutely needed.

13 Question 13

- (a) What are the practical difficulties, if any, in identifying and measuring the 'higher of' option that an entity recognizes separately from a host defined benefit promise?
- (b) Do you have any other comments on the proposals for benefit promises with a 'higher of' option? If so, what are they?

13.1 No comments.

14 Question 14

What disclosures should the Board consider as part of that review?

14.1 No comments.

15 Question 15

Do you have any other comments on this paper? If so, what are they?

15.1 It should be noted that the measurement issues for so-called Hybrid Plans has never been settled for nearly a decade, and we cannot foresee any future positive developments, as long as the Board is sticking with the current accounting for defined benefit promises. In this comment, we proposed a new integrated concept that might be able to clear up the current accounting tumbles. We are happy to corporate with the Board at any time.

Yours sincerely,
Masaaki ONO, Representative
Pension Plan Research Group, Japan

The benefit design types of pension plans

Dr. Tomoyuki Kubo (Certified Pension Actuary of Japan)

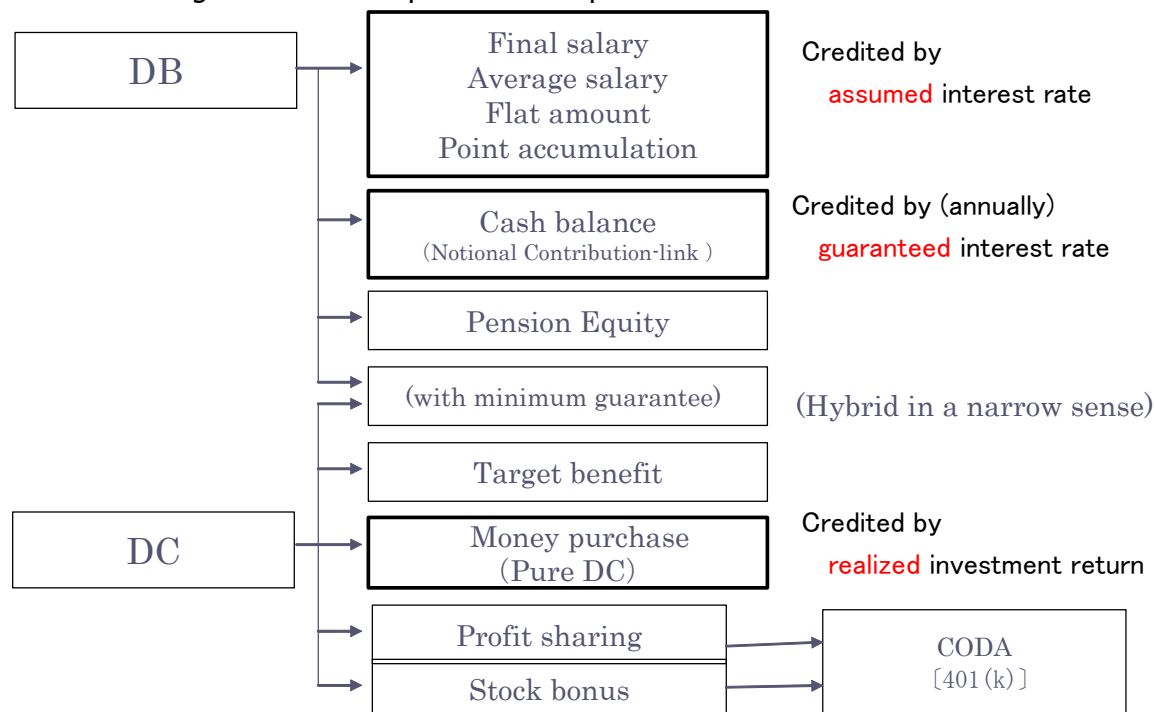
1. Defined Benefit Plan and Defined Contribution Plan

It is said that the form of pension plans can be classified roughly as follows.

- Defined Benefit Plan (DB) which promises pre-determined benefits under a plan provision
- Defined Contribution Plan (DC) which promises prescribed contributions under a plan provision

Although DC plans are greatly given attention nowadays, there are some wrong descriptions about what DC plans are. We can categorize DB plans and DC plans in more details as shown in Chart-1.

Chart-1: Categorization of DB plans and DC plans



2. Classification of pension plans by the investment risk and the inflation risk

One can say that DB is a plan under which employer (company) takes an investment risk, and DC is a plan under which employees (and beneficiaries) undertakes an investment risk. However, such

a classification may not be enough considering the variations of plans. With such a view, pension plans are classified according to the attribution of the burden of an investment risk and an inflation risk, as shown in Table-1.

Table-1: Classification of pension plans by the investment risk and the inflation risk

Class	Investment risk (Funding stage)	Investment risk (Payment stage)	Inflation risk	Classification of plans
I	Employer	Employer	Employer	Complete (Real) DB
II	Employer	Employer	Employee	Nominal DB
III	Employer	Employee	Employee	Quasi DB
IV	Employee	Employer	Employee	Adjusted DC
V	Employee	Employee	Employee	Pure DC (Saving for Old-age)

Although Complete DB (I) is desirable, it is true that employers tend to hesitate to accept those risks, which cannot be grasped in advance.

The common method to deal with inflation risk for beneficiaries is to adjust pension amounts in ad-hoc basis in Nominal DB (II). It is much easier for employers than Complete DB since they can estimate cost burden in advance. However, even such a method is not so popular among companies.

The difference between Quasi DB (III) and Pure DC (V) is which owe investment risk at funding stage, employers or employees. Japanese Termination Lump-sum Allowance may be classified as Quasi DB (III). Both type plans are not good enough since employees must take investment risk at payment stage. III seems to be better than V since employees grasp their benefit level in advance (while working), but the judgment is not so easy. Even in III, it is necessary to estimate future investment returns. If the realized returns exceed the estimate returns continuously, one may think that Pure DC (V) is better than Quasi DB (III).

However, the investment returns are volatile. It is dangerous to depend heavily on the investment market. Conceptually, Adjusted DC (IV) is possible to ease such aspect.

In general, DB is better than DC from the viewpoint of the income security at old age. However, to say so, the effort to keep real value of pension benefit is indispensable in DB. Moreover, DC may supplement DB. We should consider a plan design by understanding well about the characteristics of DB and DC. A variety of combining plans (Hybrid plans) has emerged in the United States, such as a Floor offset plan that guarantees a minimum rate of return on the basis of DC scheme.

3. Design pattern of pension plans

From this broadened viewpoint, DB and DC are not exclusive, but inclusive in the overall pension plan design pattern. The distinction of DB or DC is convenient to understand characteristics of both types, but it is not adequate as representing conceptual counterparts since it leads to DC v. s. non DC (=DB) with lacking balance.

Then, I consider to express various plan design into a following benefit formula. It represents the content in essence as:

$$\text{Benefit} = (\sum \text{Salary} * \text{Salary Percentage} * \text{Salary revalue}) \\ * \text{Revalue after Termination} * \text{Revalue after Retirement}$$

$$X = X_w \\ B(X_c) = \{ \{ \sum S_x * P_x * I(X, X_w) \} * J(X_w, X_r) \} * K(X_r, X_c) \\ X = X_e$$

Here, $B(X_c)$: Pension benefit at age X_c (After Retirement age)

X_e, X_w, X_r : Age of Entry, Termination, Retirement, respectively

(The Benefit begins at Retirement age X_r)

S_x : Salary at age X

P_x : Salary Percentage (Benefit or Contribution rate) at age X

$I(X, X_w)$: Salary Revalue Index between age X to X_w

$J(X_w, X_r)$: After Termination Revalue Index between age X_w to X_r

$K(X_r, X_c)$: After Retirement Revalue Index between age X_r to X_c

This formula can be applied to various plan design as in Table-2. To include DC, the following symbols are added.

F_x : Realized Asset amount at age X (depending on realized investment return)

G_x : Expected Asset amount at age X (depending on expected investment return)

Table 2: Application of the unified formula to various plan designs

(While active = Funding stage)

Classification	S_x	P_x	$I(X, X_w)$ Salary Revalue
Flat amount	S_{X_e} (At entry)	P_x	1
Accumulated Salary	S_x	P_{X_w} (At Termination)	1
Average Salary	S_x	$P_{X_w} / (X_w - X_e)$	1
Final Salary	S_x	P_{X_w} (At Termination)	S_{X_w} / S_x (Salary increase)
Cash Balance	S_x	P_x	G_{X_w} / F_x (Expected return)

DC	S_x	P_x	F_{x_w} / F_x (Realized return)
----	-------	-------	-----------------------------------

(Termination to Retirement: Waiting stage)

Classification	$J(X_w, X_r)$ Revalue after Termination
Retirement Benefit	1
Termination Benefit	G_{x_r} / F_{x_w} (Expected return)
DC	F_{x_r} / F_{x_w} (Realized return)

(After Retirement: Payment Stage)

Classification	$K(X_r, X_c)$ Revalue after Retirement
Nominal DB	1 or G_{x_c} / G_{x_r} (Expected return)
Real DB	Price Indexed or Salary Indexed etc.
DC	F_{x_c} / F_{x_r} (Realized return)
Annuity purchase	Converted into Nominal DB

One of the merits of this formula is that it is useful for conceptual comparisons of plan designs. For instance, the following observations can be obtained.

- (1) In a case of Flat amount design, we can consider it as using Salary fixed at the entry of the plan. Therefore, it is necessary to set the benefit rate (annually accumulated amount) relatively high or raise it periodically to provide the corresponding benefit to plans that use annually increased salary.
- (2) In a case of Average salary design, salaries are not revalued. So, it is necessary to set the benefit rate high to provide the corresponding benefit to the Final salary design.
- (3) When the benefit rates are same and equal to the rate at retirement in Final salary design and DC, the essential difference of the two is that annual salaries are revised on salary increase rates or realized investment returns. Therefore, which is better is decided on whether salary increase is larger than realized investment return or not. Cash balance uses expected returns instead of realized returns, and categorized by a kind of DB.
- (4) In the European and American traditional DB, there is no re-valuation of benefit during termination and retirement. This disadvantage does not identified if a participant continues work until retirement, but termination before retirement may result in significantly reduced benefit. In Final salary design, past salaries are revalued by salary increase rates, but benefit due to termination before retirement remains same until retirement. In DC, benefit is revalued by realized investment return without such disadvantages. That is one of the major reasons that DC is better than traditional DB. In Japanese pension scheme, a participant usually has an

option to get accumulated lump-sum instead of pensions (and he or she can invest it outside the plan) and even pensions are calculated by expected (assumed) investment returns. So, Japanese pensions are not necessarily inferior to DC. Also in the United States, a new type of DB called Pension Equity Plan has emerged that can avoid the disadvantage above mentioned. In a reality, it is same as Japanese pension that add interests to the accumulated amount at the time of termination.

4. Design pattern and re-distribution

In a complete DB plan under which benefits are indexed to inflation, there is re-distribution between generations. The reason is that costs for the indexation occurred later must depend on later generations (their contributions that will generate by their earnings). In DB, there may be other types of re-distribution. The examples are a case of ad-hoc benefit amendments, overall improved longevity, or differences between expected investment return and realized investment return. Those costs are difficult to be financed only by current generation.

However, more essential in DB is re-distribution within generation. The minimum benefit or the benefit level reflecting longevity risk cannot be set without re-distribution within generation. On the other hand, there is no re-distribution function in DC that is essentially saving based on personal account.

There are few arguments about re-distribution in a person (life-cycle re-distribution). This relates to the balance of benefits and costs. In the public pension plan and the traditional DB pension system in Europe and the U. S., benefits are accumulated at pensionable (retirement) age, so that they should be called 'retirement benefit'. In this system, costs for benefits increases as age increases if accrued benefits per year are same. That is, costs for old people are larger than for younger people. Therefore, naturally speaking, allocations of cost should be more to younger ages than to older ages. However, with smoothing contributions, benefit accruals are smaller than cost allocations in younger ages, while benefit accruals are larger than cost allocations in older ages. This should be understood not as conflicts between younger people and older people, but as individual life cycle allocations of costs while working.

On the other hand, Japanese pension plans are mostly shifted from termination lump-sum allowance, and benefits are accumulated not at retirement age, but at the point ('termination benefit'). In this case, influence by termination timing may be very small relative to retirement benefit type, and the relation between costs and benefits is closer than retirement benefit type. The relationship is much closer in Cash Balance under which benefits are decided by contributions and guaranteed return. Already mentioned, CB is classified in a kind of DB, and its benefits link to contributions. So, it may be useful to call it as Contribution-link by distinction to DC.

Chart-2 shows images of relation between benefits and costs in termination benefit (and Contribution-link) and retirement benefit. (Here, to emphasize the difference of the structure of both systems, the recognition of costs and the benefit accruals are greatly simplified.)

The typical form of termination benefit is Contribution-link where annual costs (contributions) are same and benefits are decided by reflecting those annual costs. The longer the period between cost recognition (timing of contributions) and benefit payment, the larger the benefits because of more guaranteed returns. Therefore, accumulated benefit at pensionable age is larger in younger ages than in older ages as follows (see Chart-2).

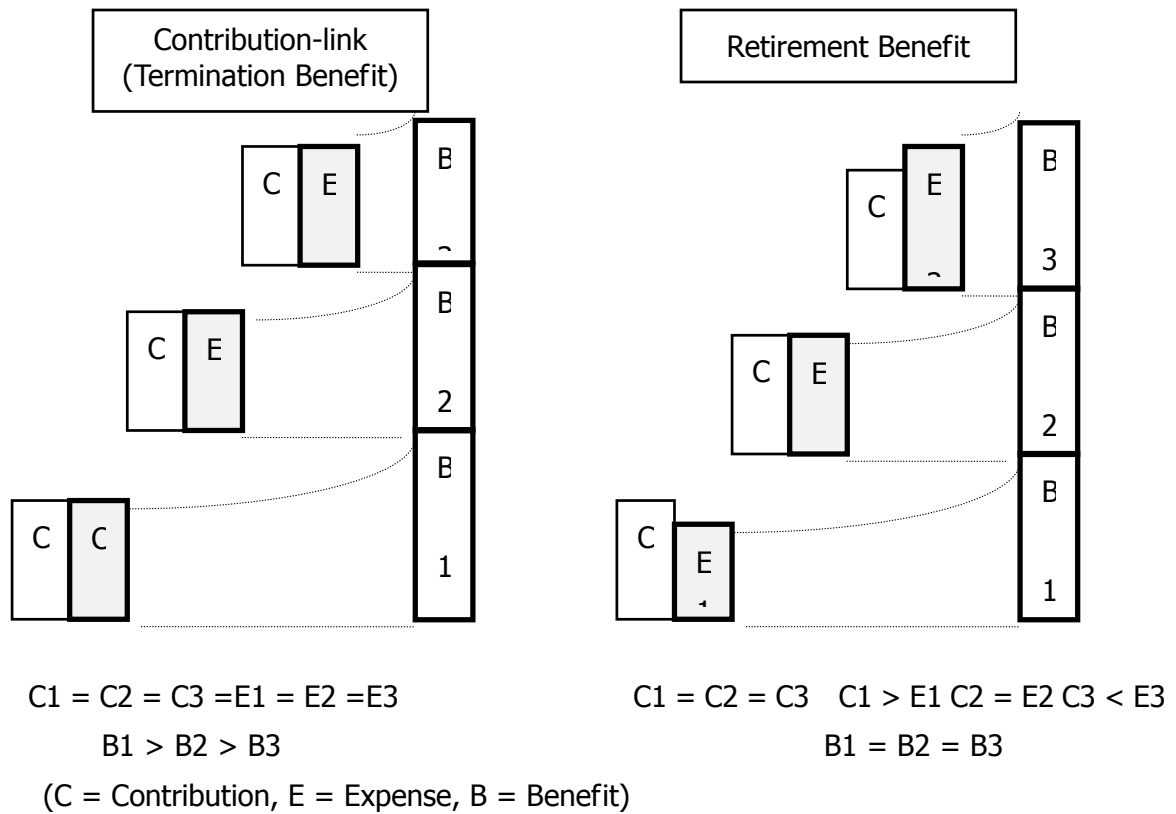
$$\text{Cost1} = \text{Cost2} = \text{Cost3} \rightarrow \text{Benefit1} > \text{Benefit2} > \text{Benefit3}$$

On the other hand, in retirement benefit, annual benefit accrual at pensionable age is same, and annual costs are decided by these annual benefit accruals. In this case, the longer the period between cost recognition (timing of contributions) and benefit payment, the smaller the costs because of more expected investment returns as follows.

$$\text{Benefit1} = \text{Benefit2} = \text{Benefit3} \rightarrow \text{Cost1} < \text{Cost2} < \text{Cost3}$$

In case of common smoothing contributions, contributions at younger ages are larger than costs, while contributions at older ages are smaller than costs. It means that surplus at younger ages covers deficits at older ages. This is the structure of life-cycle re-distribution.

Chart-2: Relation among benefits, costs and contributions



5. Life-cycle re-distribution and public pension (Abbreviated)