Future prospects for Koseinenkinkikin, one type of Defined-benefit Employee Pension Fund in Japan

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Abstract
Koseinenkinkikin employee pension funds (EPF), a type of defined-benefit (DB) employee pension fund prevalent in Japan, are distinguished in two key respects. First, EPFs serve as a partial substitute for the public pension system. EPFs are prefunded by employers to pay a portion of their employees' future pension benefits on behalf of the national government, in addition to benefits paid by the employers' own pension plans. Second, multiple unaffiliated companies within the same industry, including companies too small to feasibly administer a EPF independently, can jointly set up and administer a single EPF. This flexibility has contributed to growth in the prevalence of EPFs.
Focusing on these two distinctive characteristics, this paper discusses the challenges currently facing EPFs, one cornerstone of post-retirement income security in Japan, and proposes improvements in response to such challenges.
With pension finances under growing strain amid the current adverse investment environment, the future of defined-benefit (DB) corporate pension plans is at risk. This paper aims to help identify measures to ensure the stable administration of EPFs (which are a type of DB plan) into the future.

1. Introduction
Employees' pension funds (*Koseinenkinkikin*), a type of corporate pension plan common in Japan, are distinguished in two key respects. First, EPFs serve as a partial substitute for the public pension system. Second, multiemployer EPFs jointly established by multiple unaffiliated companies are widely prevalent.
EPFs were first established in 1965 and grew in number to 1,874 in 1998. Subsequently, however, the number of EPFs began to decline, falling to 612 as of July 1, 2009. One factor behind this decline was that publicly traded Japanese companies adopted a new accounting standard for postretirement benefits effective from April 2000. Another major contributing factor was that the new accounting standard's adoption coincided with three consecutive years of negative returns on pension plan assets.
The major decrease in the number of EPFs was predominantly attributable to declines in the number of single-employer EPFs and affiliated-employer EPFs, which cover multiple affiliated companies. The number of multiemployer EPFs, which cover multiple unaffiliated SMEs (small and medium-sized enterprises), did not decrease much. Currently, approximately 80% of the remaining EPFs are multiemployer EPFs. EPFs play a major role as a corporate pension plan for SMEs.
Despite the decrease in the number of EPFs, SMEs are still heavily counting on EPFs to provide post-retirement income security to their workforces. This paper discusses the outlook for EPFs, focusing on their two distinguishing characteristics mentioned in the opening paragraph.

2. Overview of EPFs

First, we present an overview of EPFs.

Returns on EPF assets were negative in both fiscal 2007 and 2008 (years ended March 2008 and 2009, respectively). In response, the government implemented measures to enhance the flexibility of EPF finances as described in section (5) below.
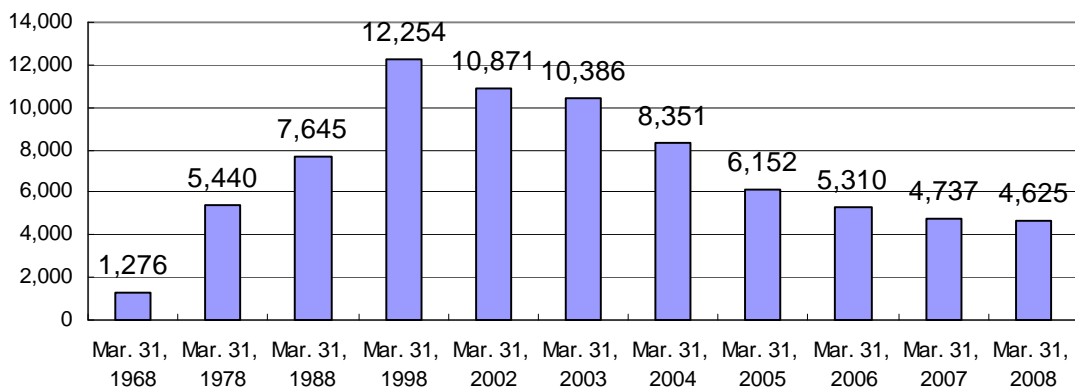
(1) History

EPFs were first established in 1965 pursuant to the Employees' Pension Insurance Act. The numbers of EPFs and their participants are plotted as time series in Figures 1 and 2 below.

Figure 1. Number of EPFs
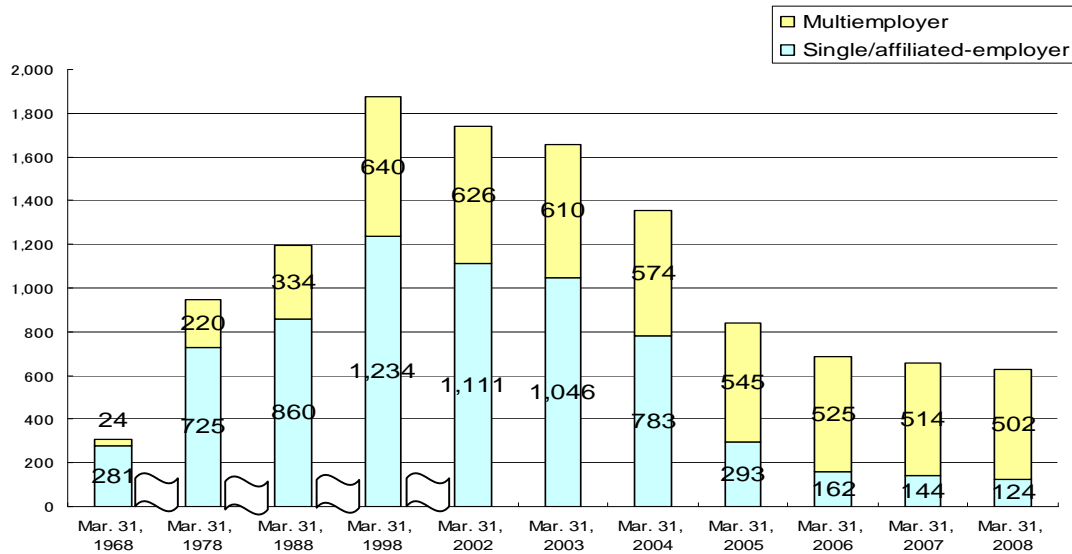
Source: Basic Corporate Pension Data, December 2008 (Pension Fund Association)

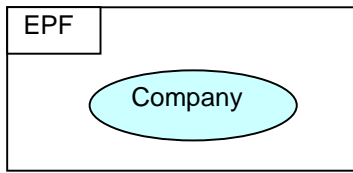**Figure 2. Number of EPF participants**

Source: Basic Corporate Pension Data, December 2008 (Pension Fund Association)

(2) Types of EPFs

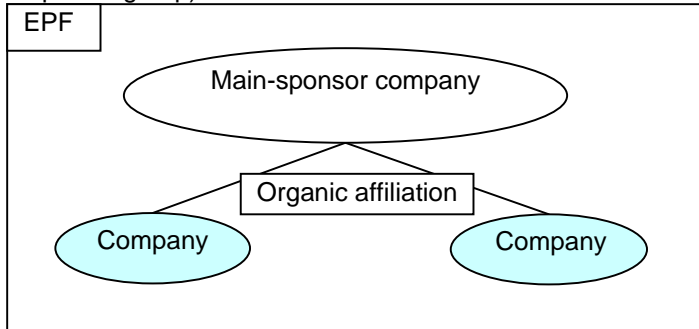There are three types of EPFs: single-employer, affiliated-employer, and multiemployer.

(i) Single-employer EPF

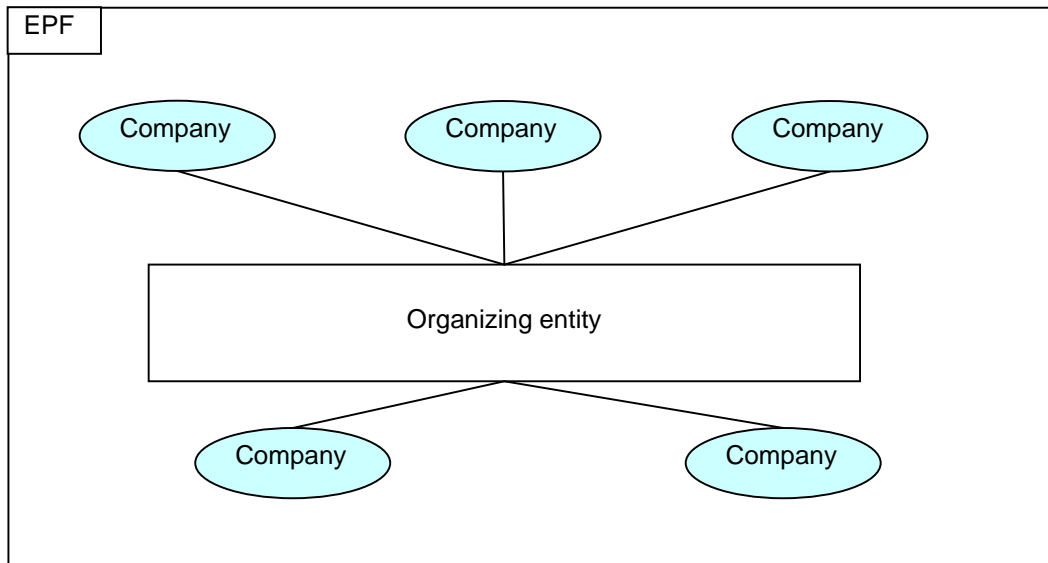An EPF independently established by a single company

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┌─────────────────────────────────┐
│ EPF │                           │
│─────┘                           │
│         ( Company )             │
│                                 │
└─────────────────────────────────┘
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(ii) Affiliated-employer EPF
An EPF jointly established by multiple companies organically affiliated with each other (e.g., a corporate group)

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┌──────────────────────────────────────────┐
│ EPF │                                     │
│─────┘                                     │
│        (  Main-sponsor company  )         │
│              ┌──────────────────┐         │
│              │ Organic affiliation │      │
│   ( Company )                  ( Company ) │
│                                           │
└──────────────────────────────────────────┘
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(iii) Multiemployer EPF
An EPF jointly established by multiple unaffiliated companies in the same industry or same geographic region

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┌────────────────────────────────────────────────────┐
│ EPF │                                               │
│─────┘                                               │
│   ( Company )   ( Company )   ( Company )            │
│          \          |          /                    │
│        ┌───────────────────────────────┐            │
│        │       Organizing entity        │           │
│        └───────────────────────────────┘            │
│          /                    \                     │
│   ( Company )              ( Company )               │
│                                                     │
└────────────────────────────────────────────────────┘
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(3) Benefit Formulas
In terms of benefit formulas, there are two models of EPFs: the substitutional model and supplemental model.
The substitutional model is similar in design to the substitutional component of benefits and differs only in terms of the benefit multiplier rate.
The supplemental model provides benefits comprising a basic component and a supplemental component. The basic component comprises the substitutional component plus a top-up component. It is identical in design to the substitutional component. The supplemental component is an added benefit unique to EPFs. It takes the place of corporate lump-sum payment plans.

(4) Establishment Requirements

The main requirements establishing an EPF are as follows.

Minimum Number of Participants

Type	Minimum participants
Single-employer	1,000 (*500)
Affiliated-employer	1,000 (*800)
Multiemployer	5,000 (*3,000)

*Minimum participants for EPFs established before April 1, 2005

Benefit Level
- EPFs must endeavor to achieve a pension benefit level equivalent to 323% of the substitutional portion of benefits.
- The top-up＋supplemental benefit level is at least 50% of the substitutional component (10% for EPFs established before April 1, 2005)　　(See Figure3.)

(Benefit composition assuming benefits commence at age 65)

	Top-up＋supplemental component (A)	
Total pension benefits	Substitutional component (B)	Substitutional portion of benefits

Age 60　　　　Age 65
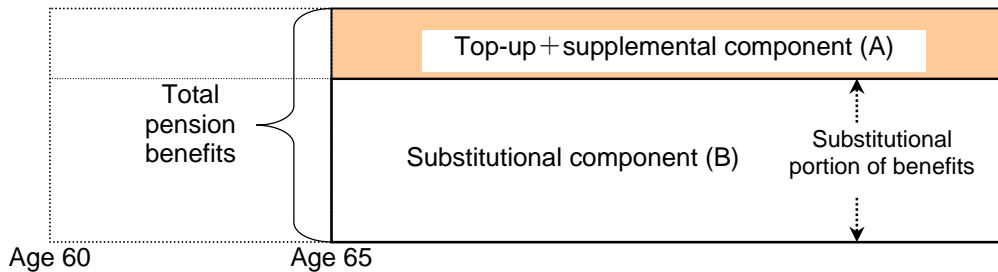
Top-up＋supplemental **component (A) ≥ substitutional component (B) × 50%**

- The top-up＋supplemental component includes a life annuity payable from age 65 (basic component). The life annuity must be equivalent to at least 5% of the substitutional portion of benefits payable from age 65.

Fixed-term annuity component	Supplemental component from age 65	
Life annuity component	Top-up＋supplemental component from age 65 (C)	
	Substitutional component	Substitutional portion of benefits from age 65 (D)

Age 60　　　　Age 65
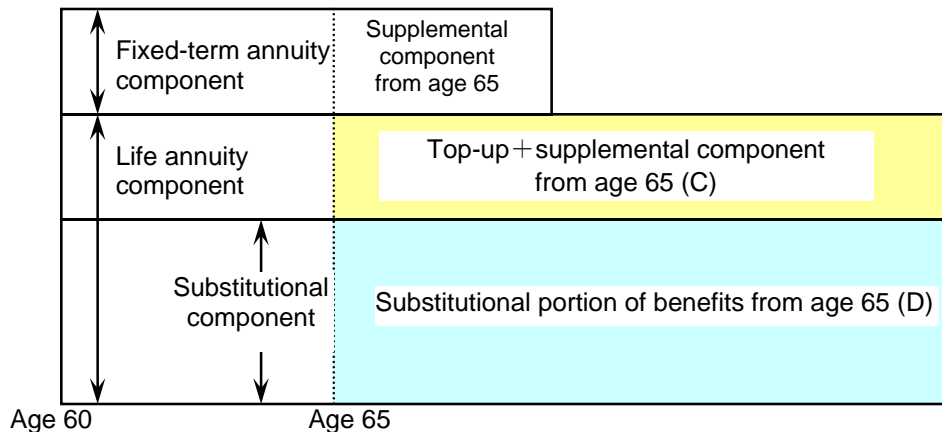
(C) ≥ (D) × 5%

Benefit Payment Requirements

Old-age Pension Benefits
- Payment of benefits must commence by age 65 at the latest.
- Benefit vesting period: 1 month

Supplemental benefits
- Maximum vesting period for annuity benefits: 20 years
- Maximum vesting period for lump-sum benefits: 3 years

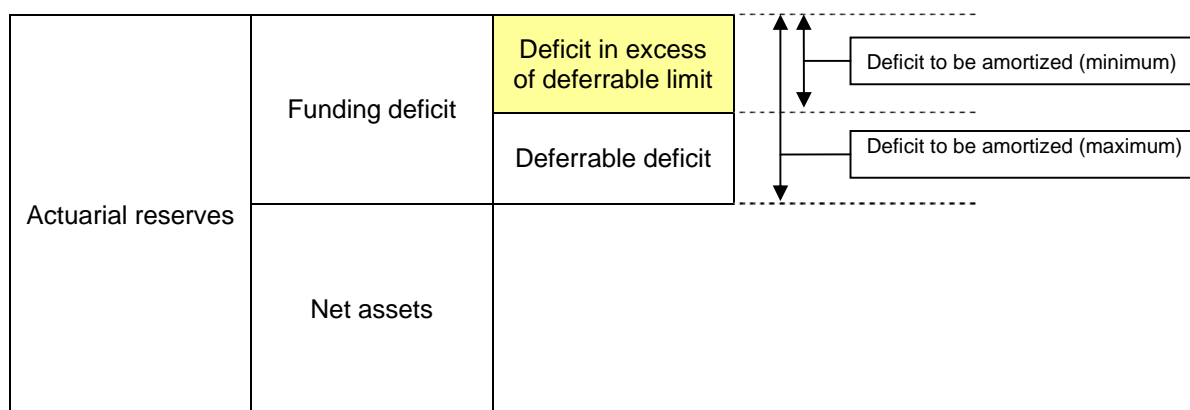**(5) Measures to Enhance Pension Finance Flexibility**
The government implemented measures to enhance pension finance flexibility in response to substantial underfunding of EPFs as a result of two consecutive years of deterioration in the investment environment in fiscal 2008-09.

(i) Deferment of Contribution Increases
EPFs that need to increase contribution levels between April 1, 2010, and March 31, 2012, are permitted to defer the contribution increases, provided that they submit a long-term financing plan.

(ii) Funding Deficit Subject to Amortization Limited to Nondeferrable Portion
In recalculating contributions, EPFs found to be underfunded by an ongoing-basis actuarial review with a fiscal-year-end base date between March 31, 2009, and March 31, 2012, are permitted to limit amortization of the funding deficit to the portion of the deficit in excess of the amount permitted to be deferred.

Actuarial reserves	Funding deficit	Deficit in excess of deferrable limit	Deficit to be amortized (minimum)
		Deferrable deficit	Deficit to be amortized (maximum)
	Net assets		

(iii) Adjustment of Minimum Actuarial Reserves
See 3(3)(iii) below. In valuing minimum actuarial reserves, which are equivalent to substitutional benefit obligations, EPFs are permitted to downwardly adjust the obligations' valuation by a minimum actuarial reserves adjustment.

3. Substitutional Provision
Substitutional provision was one factor behind the major decrease in the number of EPFs. Most single-employer and affiliated-employer EPFs elected to transfer back to the government their rights and obligations associated with the substitutional portion of benefits. They did so for two main reasons. First, Japanese companies were required to adopt a postretirement benefit accounting standard that mandated recognition of substitutional benefit obligations as corporate liabilities. Second, EPFs incurred actuarial losses in the wake of deterioration in the investment environment.
In contrast, few multiemployer EPFs elected to return their substitutional components to the government, for two main reasons. First, their participant companies are not required to recognize retirement benefit obligations due to the difficulty of rationally apportioning pension assets among them. Instead, they are merely required to expense their pension contributions. Second, multiemployer EPFs' participant companies were generally unable to make the lump-sum contributions required to fund unfunded liabilities when returning the substitutional component to the government.
Substitutional provision is discussed in more detail below.

(1) How Substitutional Provision Works

Substitutional provision is an arrangement whereby EPFs assume an obligation to pay a portion of old-age pension benefits, which are public pension benefits.

About 90% of EPFs pay benefits comprising substitutional benefits + top-up benefits + supplemental benefits. The other roughly 10% of EPFs pay benefits consisting of substitutional benefits + top-up benefits. In this paper, we refer to the sum of the substitutional and top-up benefits as "basic benefits" (Figure 3).

In exchange for paying a portion of public pension benefits on behalf of the government, companies with EPFs are partially exempted from paying pension insurance premiums payable to the government. These exempted premiums are called "exempted contributions." EPFs calculate their respective exempted contribution rates using a statutory formula applicable to all pension funds.

EPFs likewise individually calculate their contribution rates pertaining to the substitutional component of benefits based on their respective actuarial assumptions, subject to a minimum equivalent to their exempted contribution rate. Under proposed revisions to pension finance standards unveiled in July 2009, the contribution rate for the substitutional portion of benefits would be set at parity with the exempted contribution rate.

Upon dissolution, an EPF must remit the full amount of its minimum actuarial reserves to the Pension Fund Association (PFA). The PFA[1] then assumes the obligation to pay the substitutional portion of benefits to the dissolved EPF's participants.

Figure 3.
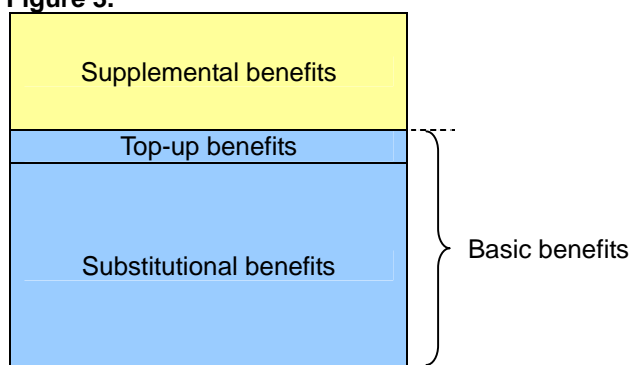
*1. Pension Fund Association: The PFA was established in February 1967 as a federation of EPFs and reorganized into its present form in October 2005. In addition to paying benefits to former participants of defunct EPFs, the PFA's other functions include operating an interim pension plan for temporarily unemployed persons formerly enrolled in an EPF.

(2) Distinctive Characteristics of Substitutional Provision
One benefit of substitutional provision is economies of scale stemming from expansion of pension assets through inclusion of the substitutional component.

In the case of multiemployer EPFs, whereby multiple companies with different postretirement benefit plans join together to form a single corporate pension plan, inclusion of the substitutional portion of benefits, even if the benefits are meager, gives the participant companies sufficient assets to collectively operate a corporate pension plan. Additionally, if SMEs progressively join multiemployer EPFs that offer such economies of scale, this trend should spur growth in corporate pension plans' prevalence. With Japanese society rapidly aging, promoting the spread of corporate pension plans that will fulfill the role of supplementing public pensions to provide post-retirement income security is a societal responsibility. The government should proactively devise policies and specific measures to promote widespread proliferation of corporate pension plans.

Substitutional provision is intended to be neutral in terms of pension financing, meaning that if an EPF earns the same return on its assets as the Employees' Pension Insurance (EPI) Reserve Funds, its participant companies will not incur any additional contributions (see 3(3)(ii) below). Accordingly, if an EPF earns a higher return than the EPI Reserve Fund, it can benefit from actuarial gains.

For publicly traded companies, however, substitutional provision is a risk factor because they must recognize substitutional benefit obligations as corporate liabilities in accord with the current accounting standard for postretirement benefits.

(3) Financing of Substitutional Component
Although EPFs value their liabilities using different methods for each benefit component, most EPFs manage their assets as a single portfolio without segregating them by benefit component. Liability valuation methods are presented in the table below by benefit component.

Benefit Component		Liability Valuation on Balance Sheet
Basic component	Substitutional component	Minimum actuarial reserves
	Top-up component	Actuarial liability (= present value of total basic benefit obligations - present value of future normal contribution income earmarked for basic benefits - present value of government contributions - present value of prior-service substitutional benefits) Under the July 2009 proposed revisions to pension finance standards, the above would be revised as follows. Actuarial liability (= present value of total top-up benefits - present value of future normal contribution income earmarked for top-up benefits)
Supplemental component		Actuarial liability (present value of total supplemental benefits - present value of future normal contribution income earmarked for supplemental benefits)

(i) Major Pension Financing Reforms to Date
October 1999: Minimum actuarial reserves and exempted contribution rates frozen
April 2005: Minimum actuarial reserves and exempted contribution rates unfrozen
July 2009: Draft proposal of pension finance standard revisions released

In October 1999, with the Japanese economy in the midst of a protracted severe recession, EPI premium rates (contribution rates for old-age pensions partially administered by EPFs on behalf of the government) were frozen from being raised. The formula for calculating exempted contribution rates was also frozen and the formula for calculating minimum actuarial reserves (i.e., substitutional benefit obligations) was revised as follows. This latter revision was called the "minimum actuarial reserves freeze."

Minimum actuarial reserves = present value of future substitutional benefits accrued from periods of prior service as of September 30, 1999(including interest on them from October 1, 1999, onward) + income associated with substitutional component (exempted contributions, funds transferred from PFA) (inclusive of interest) from October 1, 1999, onward - outgoings associated with substitutional component (substitutional benefits, funds transferred to PFA) (inclusive of interest) from October 1, 1999, onward

The interest rate used to calculate total contribution income and benefit payments inclusive of interest is a government-published rate based on the EPI Reserve Fund's actual investment returns. The EPI Reserve Fund's investment returns are reported with a lag of 21 months due to delays involved in verifying its returns. This outdated rate of return is used to calculate minimum actuarial reserves.
In April 2005, all of the aforementioned freezes were lifted and previous calculation formulas were reinstated. The method of calculating minimum actuarial reserves during the freeze period was maintained in the aim of neutralizing pension finances (explained below).

(ii) Neutralization of Pension Finances

Neutralization of pension finances means pursuing cost-neutrality so that companies that have an EPF are neither advantaged nor disadvantaged in terms of pension expenses in comparison to if they did not have an EPF.

In the aim of pension finance neutrality, the government implemented an adjustment mechanism between EPFs and the EPI Reserve Fund from April 2005 to ensure that contributions associated with EPFs' substitutional component are the same as they would be if the contributing company had not established or joined an EPF.

Specifically, the adjustment is done as follows based on the present value of substitutional benefit obligations accrued from periods of prior service ("prior-service substitutional benefit obligations").

(a) If an EPF's minimum actuarial reserves fall below 50% of the present value of its prior-service substitutional benefit obligations, the EPI Reserve Fund remits to the EPF 20% of the difference between the EPF's minimum actuarial reserves and 50% of the present value of its prior-service substitutional benefit obligations.
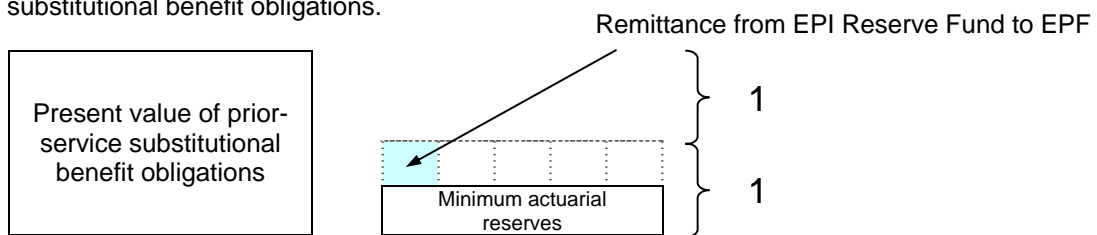
(b) If an EPF's minimum actuarial reserves fall below 25% of the present value of its prior-service substitutional benefit obligations, the EPI Reserve Fund remits to the EPF 100% of the difference between the EPF's minimum actuarial reserves and 50% of the present value of its prior-service substitutional benefit obligations.
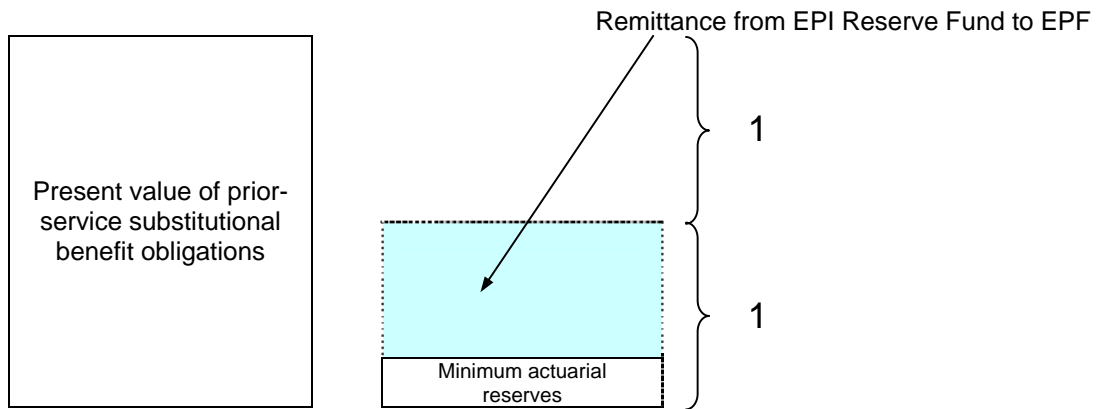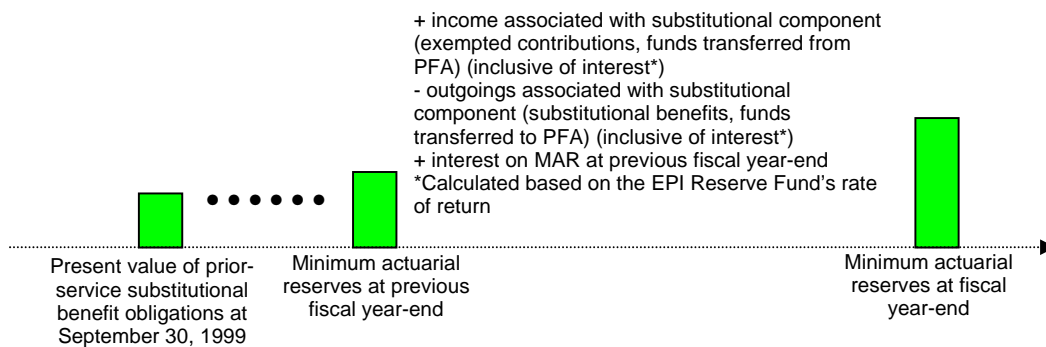

(c) If an EPF's minimum actuarial reserves exceed 150% of the present value of its prior-service substitutional benefit obligations, the EPF adjusts the substitutional component of its contribution rate by deducting said excess from its projected substitutional benefit expenditures.

Reduction of exempted contribution rate

Minimum actuarial reserves   } 1.5

Present value of prior-service substitutional benefit obligations } 1
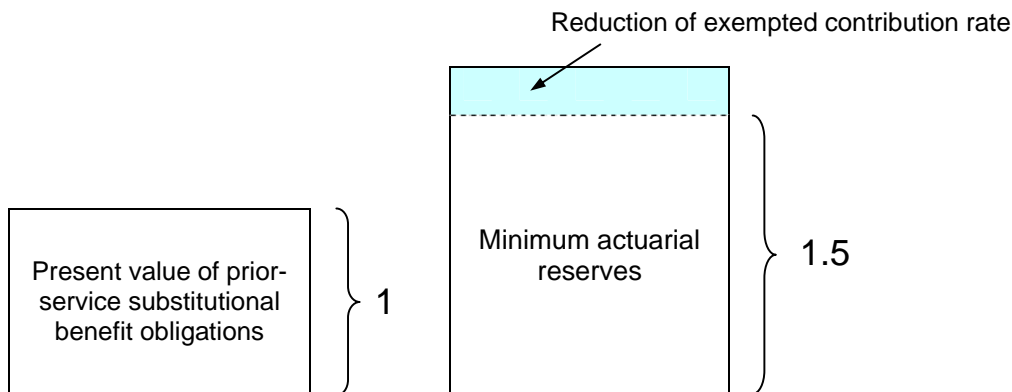
The present value of prior-service substitutional benefit obligations is calculated as the present value of projected substitutional benefits attributable to periods of prior service (excluding the portion to be paid by the government).

(iii) More Precise Neutralization of Pension Financing (Adjustment of Applicability Period of Interest Rate Applied to Minimum Actuarial Reserves)

+ income associated with substitutional component (exempted contributions, funds transferred from PFA) (inclusive of interest*)
- outgoings associated with substitutional component (substitutional benefits, funds transferred to PFA) (inclusive of interest*)
+ interest on MAR at previous fiscal year-end
*Calculated based on the EPI Reserve Fund's rate of return

Present value of prior-service substitutional benefit obligations at September 30, 1999

Minimum actuarial reserves at previous fiscal year-end

Minimum actuarial reserves at fiscal year-end

The interest rate applied to minimum actuarial reserves is a government-published rate based on the EPI Reserve Fund's actual investment returns.
Because the EPI Reserve Fund's actual rate of return takes time to verify, it has been applied with a lag of 21 months (Figure 4).
From the current fiscal year (ending March 31, 2010), however, a minimum actuarial reserves adjustment has been introduced. The amount of the adjustment is equivalent to the difference between minimum actuarial reserves' value calculated based on immediate application of the EPI Reserve Fund's actual rate of return and their value calculated based on the EPI Reserve Fund's actual rate of return applied with a 21-month lag. If the latter value is the larger of the two, minimum actuarial reserves will be reduced by deducting the amount of the difference between the two values. If the latter value is the smaller of the two, minimum actuarial reserves will be increased by the amount of the difference.
By thus eliminating the timelag with which the EPI Reserve Fund's actual rate of return has been applied to valuation of minimum actuarial reserves, the government aims to neutralize pension finances more precisely by eliminating differential treatment between companies with an EPF and companies without one.

Figure 4. Assumed Rate of Return on Minimum Actuarial Reserves

Fiscal year ended (ending) March 31,	EPI Reserve Fund's actual rate of return		Applicable period (January 1 – December 31)	Interest rate applied
1998	4.66	21-month lag		
1999	4.15			
2000	3.62		1999	4.66
2001	3.22		2000	4.15
2002	1.99		2001	3.62
2003	0.21		2002	3.22
2004	4.91		2003	1.99
2005	2.73		2004	0.21
2006	6.82		2005	4.91
2007	3.10		2006	2.73
2008	-3.54	21-month lag	2007	6.82
2009	-6.83		2008	3.10
2010			2009	-3.54
2011			2010	-6.83

(iv) Exempted Contribution Rate

Because companies enrolled in an EPF have assumed the obligation of paying a portion of public old-age pension benefits, they are exempt from paying the government pension insurance premiums associated with this substitutional portion of benefits. This exempted portion of premiums is called the "exempted contribution."

The exempted contribution rate was originally uniform for all EPFs. Since August 1996, however, EPFs have set their own exempted contribution rate, albeit subject to minimum and maximum limits.

EPFs individually calculate their own contribution rates for the substitutional component of their benefit obligations (substitutional contribution rate) based on assumptions (e.g., interest and mortality rates) used by the EPI Reserve Fund. Based on this substitutional contribution rate, they set their exempted contribution rate within the statutorily prescribed limits.

Any EPF that sets its substitutional contribution rate outside of the bounds of the statutorily prescribed minimum and maximum exempted contribution rates would be setting its contribution rate at a level that will result in actuarial gains or losses.

If the substitutional contribution rate is below the minimum exempted contribution rate, the EPF's contribution rate would be higher than required to fund the substitutional portion of its benefit obligations and the EPF would end up actuarially overfunded. Meanwhile, to the extent that its exempted contribution rate exceeds its substitutional contribution rate, the EPF would benefit from an extra exemption on contributions payable to the government and, in turn, a reduced pension contribution burden.

Conversely, if the substitutional contribution rate is above the maximum exempted contribution rate, the EPF's exempted contribution rate would be lower than required to fund the substitutional portion of its benefit obligations. In such a case, the EPF's exemption on contributions to the government would be reduced to the extent that its substitutional contribution rate exceeds the exempted contribution rate, resulting in the disadvantage of an increased contribution burden. This is one impediment to widespread proliferation of EPFs.

One approach to increasing EPFs' prevalence is to abolish the minimum and maximum limits on the exempted contribution rate in the aim of greater neutrality of pension financing.

(v) Expected rate of return

The contribution rate has previously been calculated for the basic-benefit component as a whole (i.e., substitutional component + top-up component). If the contribution rate thus calculated was below the exempted contribution rate (see 3(4)), the contribution rate for the basic-benefit component was required to be set at a minimum of the exempted contribution rate.

Under the revised pension finance standards proposed in July 2009, however, contribution rates would be calculated separately for the substitutional component and top-up component.

As discussed above, the government aims to realize pension financing neutrality with respect to the substitutional component. If EPFs earn investment returns equal to the EPI Reserve Fund's rate of return, no funding deficit or surplus would arise, but the assumed interest rate used to calculate exempted contribution rates typically differs from expected rate of returns respectively set by individual EPFs. On the assumption that EPFs manage their assets as a single portfolio in the aim of achieving returns equivalent to their expected rate of return set without differentiating between the substitutional component and other benefit components, EPFs would be affected as follows.

(a) If assumed interest rate for calculating exempted contribution rate < expected rate of return set by EPF:
If an EPF manages its assets as a single portfolio without differentiating between the substitutional component and other benefit components and earns investment returns equivalent to its expected rate of return, its substitutional-component contribution rate (exempted contribution rate) would be set higher than necessary. Once the EPF's minimum actuarial reserves exceed 150% of the present value of its prior-period substitutional benefit obligations, the EPF would adjust its minimum actuarial reserves by refunding the excess to the EPI Reserve Fund. However, if the EPF maintains minimum actuarial reserves below 150% of the present value of its prior-period substitutional benefit obligations, it may use its substitutional-component funding surplus to fund other components of its benefit obligations.

(b) If assumed interest rate for calculating exempted contribution rate > expected rate of return set by EPF:
If an EPF manages its assets as a single portfolio without differentiating between the substitutional component and other benefit components and earns investment returns equivalent to its expected rate of return, its substitutional-component contribution rate (exempted contribution rate) would be insufficient to fully fund its substitutional benefit obligations. Once the EPF's minimum actuarial reserves fall below 50% of the present value of its prior-period substitutional benefit obligations, the EPF would receive an injection of funds from the EPI Reserve Fund. However, as long as its minimum actuarial reserves remain above 50% of the present value of its prior-period substitutional benefit obligations, the EPF would have to cover its substitutional-component funding deficit with funding earmarked for other components of its benefit obligations.

(c) If assumed interest rate for calculating exempted contribution rate = expected rate of return set by EPF:
If an EPF manages its assets as a single portfolio without differentiating between the substitutional component and other benefit components and earns investment returns equivalent to its expected rate of return, its substitutional-component contribution rate would be set at the appropriate level. The EPF would consequently not need to adjust its finances with the EPI Reserve Fund.
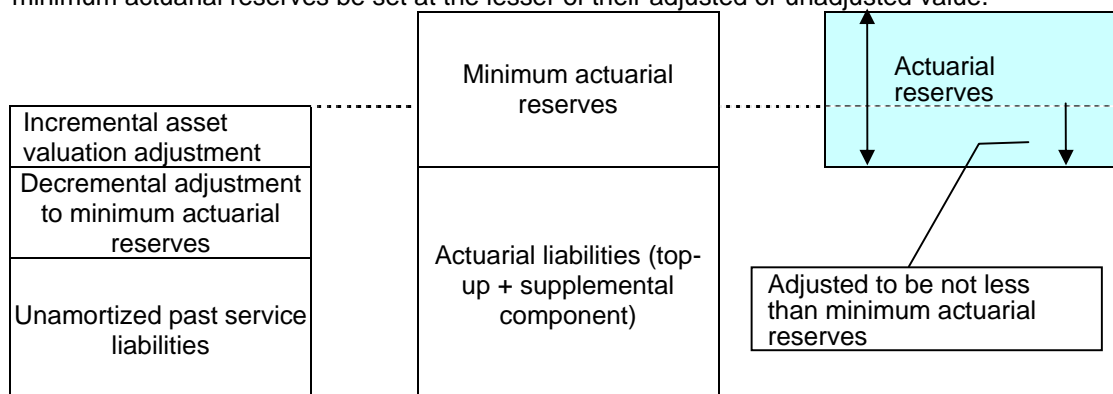
(ⅵ) Ongoing Basis and Discontinued Basis

(a) Ongoing Basis
If an EPF's ratio of net assets to actuarial reserves is below 100%, the EPF must revise its contribution schedule, unless its funding deficit is within the deferrable range set by itself. Actuarial reserves are the greater of minimum actuarial reserves or the sum total of actuarial liabilities (top-up + supplemental component), minimum actuarial reserves, the decremental asset valuation adjustment, and the incremental adjustment to minimum actuarial reserves, minus the sum total of the incremental asset valuation adjustment, decremental adjustment to minimum actuarial reserves and unamortized balance of past service liabilities.
Because actuarial reserves by definition incorporate the asset valuation adjustments and cannot be less than minimum actuarial reserves, an EPF that books an incremental asset valuation adjustment may not be able to benefit fully from expected decreases in actuarial reserves. A

better approach, in our view, would be to treat asset valuation adjustments as contra or adjunct account entries on the asset side à la the discontinued basis (discussed below).

Additionally, from the standpoint of reducing companies' cost burden in the aim of promoting further proliferation of EPFs to supplement public pensions, we suggest that ongoing-basis minimum actuarial reserves be set at the lesser of their adjusted or unadjusted value.

Incremental asset valuation adjustment	Minimum actuarial reserves	Actuarial reserves
Decremental adjustment to minimum actuarial reserves		
Unamortized past service liabilities	Actuarial liabilities (top-up + supplemental component)	Adjusted to be not less than minimum actuarial reserves

(b) Discontinued basis

If an EPF's net assets are below the greater of its minimum funding requirement (calculated as 90% of minimum actuarial reserves until March 31, 2012) or 105% of its minimum actuarial reserves, the EPF must revise its contribution schedule. However, it need not to do so if its net assets are above both 105% of its minimum actuarial reserves and 90% (80% until March 31, 2012) of its minimum funding requirement, and its net assets were above the greater of its minimum funding requirement (calculated as 90% of minimum actuarial reserves until March 31, 2012) or 105% of its minimum actuarial reserves in at least two of the fiscal years covered by its most recent triennial actuarial review.

If an EPF uses actuarial valuation as an asset valuation method, it may use actuarial assets (= net assets + incremental asset valuation adjustment - decremental asset valuation adjustment) instead of net assets in recalculating its contribution schedule.

The minimum funding requirement is minimum actuarial reserves plus the top-up + supplemental component's minimum funding requirement (calculated by valuing past service liabilities using statutory interest and mortality rates; the statutory interest rate is set based on the 5-year average of the 30-year Japanese government bond subscription yield).

When actuarial reviews are conducted on a discontinued basis, incremental and decremental adjustments to minimum actuarial reserves are disregarded. In our view, however, these adjustments should be taken into account à la the ongoing basis or minimum actuarial reserves should be set at the lesser of their adjusted or unadjusted value.

(4) Life Annuities

EPFs' pension benefits are required to include a certain minimum level of life annuity benefits. While life annuities contribute greatly to post-retirement income security, they have the drawback of requiring increased contributions to cover longevity risk. In the aim of preventing EPF dissolutions, the government consequently should implement policy measures as needed to aid EPFs that provide life annuity benefits.

(5) Other Recommended Improvements
(i) Elimination of Additional Contributions If Substitutional-Component Contributions Equal Exempted Contributions

For the substitutional component, we recommend eliminating the requirement to amortize unamortized past service liabilities through special contributions and rectifying actuarial underfunding or overfunding solely by the method discussed above in 3(3)(ii). In other words, use of special contributions to amortize unamortized past service liabilities would be limited to past service liabilities associated with benefit components other than the substitutional component. In

such an event, asset apportionment methods such as the following could be used to calculate unamortized past service liabilities associated with non-substitutional benefit components.

- Asset apportionment based on the ratio of actuarial liabilities associated with non-substitutional components to minimum actuarial reserves
- Asset apportionment based on the ratio of actuarial liabilities associated with the substitutional component to actuarial liabilities associated with other components

Another idea is to conduct fiscal-year-end actuarial reviews only for non-substitutional components and limiting the actuarial review of the substitutional component to determining whether finance neutralization measures are needed.

(ii) Safeguards against Exempted Contribution Rate Declines
When the exempted contribution rate declines, EPFs may not be able to accumulate adequate funding.
We suggest that instead of a uniform statutory interest rate, EPFs be permitted to choose an assumed interest rate at their own discretion or within a prescribed range for calculating their exempted contribution rate. We see no need to prevent EPFs from setting a low assumed interest rate to maintain sound finances. If exempted contribution rates rise, even to the detriment of the EPI program's finances as a result of a commensurate decrease in pension insurance premiums paid to the government, the rise should be permissible from the standpoint of social security if it is construed as a cost paid by the government to promote wider proliferation of corporate pension plans to supplement public pensions.

(iii) Simplification of Complexity
Due to the existence of the substitutional component, whenever the public old-age pension program is revised, EPFs also must adapt to the public pension reform. The EPF scheme has consequently become increasingly complex, resulting in a substantial increase in the administrative costs of running an EPF. These trends are unreasonable impediments to the widespread proliferation of EPFs.
The government should accordingly endeavor to ensure that EPFs are unaffected or only minimally affected by reforms to the public old-age pension program.

(iv) Expansion of EPI Coverage
With employment modalities diversifying, the government is considering expanding the scope of EPI coverage. If EPI coverage is indeed expanded, the government should implement some type of measures to stabilize pension finances (e.g., deny the supplemental benefit component to participants that gained eligibility through the coverage expansion), even if EPFs' enrollment likewise expands.

(v) Apportionment of Assets upon Dissolution
When an EPF is dissolved, any shortfall between its funded status and the minimum actuarial reserves must be fully funded with cash contributions, leaving no residual assets after the minimum actuarial reserves are remitted to the Pension Fund Association (PFA). In this scenario, all assets accumulated to fund benefits other than substitutional benefits are appropriated to cover the substitutional portion of benefits.
One way to resolve this problem is to permit partitioning of minimum actuarial reserves, with assets at the time of dissolution divided into two parts. One part would be earmarked for the substitutional component; the other, for other benefit components. The assets earmarked for the substitutional component would be remitted to be PFA, together with the amount of estimated actuarial losses attributable to investment underperformance relative to the EPI Reserve Fund's investment returns.

(ⅵ) Contracted-out Option Instead of Exempted Contribution Model
We suggest examining the prospect of establishing an contracted-out option. EPFs could be required to provide reasonably generous benefits and establish restrictions on benefit reductions to ensure that they have assets sufficient to fund their substitutional benefits, even if they have an actuarial deficit upon dissolution.

This would resolve the problems discussed in (ii) and (iii) above.

4. Multiemployer EPFs
Multiemployer EPFs currently account for some 80% of all EPFs. EPFs fulfill a major role as SMEs' corporate pension plans. Following is a discussion of multiemployer EPFs.

(1) Multiemployer EPFs' Prevalence
Multiemployer EPFs fulfill a major role as SMEs' corporate pension plans, accounting for roughly 80% of the total number of EPFs. The distribution of multiemployer EPFs by number of participants is shown in Figure 5.

Figure 5. Number of Multiemployer EPFs by Number of Participants

Number of participants in thousands
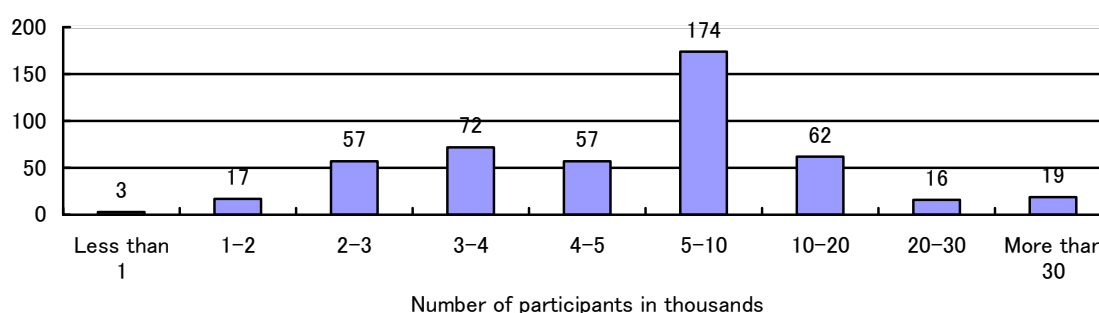
Source: Basic Corporate Pension Data, December 2008 (Pension Fund Association)

(2) Requirements for Establishment of Multiemployer EPF
Establishment of a multiemployer EPF requires an organizing entity with strong leadership and oversight capabilities vis-à-vis the companies wishing to establish the EPF. Multiple companies may jointly establish an EPF if the organizing entity is operationally sound and prospering. The type of EPF established in this manner is a multiemployer EPF.

(3) Significance of Multiemployer EPFs
Many SMEs lack the wherewithal to independently run a corporate pension plan. Enrollment in a multiemployer EPF offers such SMEs the following benefits.
- Pooling the pension assets of multiple companies enables efficient asset management.
- Inclusion of the substitutional component also increases an EPF's assets, further enhancing asset management efficiencies.
- Through advance funding, EPFs can smooth out the contribution burden, enabling stable pension financing over the long term.
- External funding can help preserve beneficiary rights.
- The costs of pension plan administration are shared among multiple companies, reducing the cost burden per company.

EPFs are required to provide a certain minimum portion of their pension benefits in the form of life annuities. EPFs therefore contribute beneficially to postretirement income security. Promoting EPF enrollment among SMEs (i.e., promoting multiemployer EPFs' widespread proliferation) is conducive to broad-based postretirement income security and can also help supplement public pension benefits. This is a valuable societal contribution.

(4) Benefit Design Issues
The socioeconomic environment has changed dramatically since the advent of multiemployer EPFs. In terms of benefit design, many EPFs would presumably be well advised to revise their benefits to match the current socioeconomic environment. In actuality, however, EPFs must comply with onerous requirements if they wish to reduce benefits. We surmise that these

requirements preclude many EPFs from redesigning their benefits. We suggest that requirements for benefit reductions be eased for multiemployer EPFs.

- The substitutional model (see 2(3)) is outdated. We suggest promoting conversion of substitutional-model EPFs to the supplemental model, to which corporate severance benefit plans are convertible. To facilitate this process, we suggest waiving the requirements normally imposed in case of benefit reductions if total benefits' present value increases.
- Many EPFs should lower their assumed interest rate, having left it unchanged since their inception. From the standpoint of promoting sound pension finances, we suggest allowing EPFs to reduce benefits if they lower their assumed interest rate.
- We suggest easing the requirements for reduction of pensioners' benefits. We suggest eliminating or modifying the requirement to give pensioners the option of receiving a lump sum payment in the amount of their respective shares of the minimum funding requirement before benefits can be reduced.

Additionally, companies enrolled in multiemployer EPFs have a variety of severance benefit plans. If a benefit design into which these severance benefit plans can be converted is newly incorporated into the supplemental benefit component, this change would make it easier for SMEs to enroll in multiemployer EPFs, thereby contributing to enhancement of postretirement income security.

Conceivable benefit designs that would facilitate SMEs' enrollment in multiemployer EPFs include the following.

- Adopt a single benefit design for the supplemental benefit component, but establish several options that differ in terms of benefit level only. Companies would select an option compatible with their existing severance benefit plan.
- To facilitate portability amid expectations of rising labor mobility, adopt benefit plans with account balances that are clearly determinable when plan participants change employers (e.g., point-based plans, cash balance plans).

(5) Pension Finance Issues

In terms of financing multiemployer EPFs, questions warranting attention include the following. Is the contribution burden fairly distributed among companies? Are EPFs' assumed interest rates too high in the current asset management environment? Are multiemployer EPFs collecting lump-sum payments for funding deficits when companies exit an EPF?

- One method to ensure a fair distribution of the contribution burden among companies is to set contributions by tracking unamortized past service liabilities on a company-by-company basis. Another approach would be to manage assets segregated by benefit component in addition to setting contributions by tracking unamortized past service liabilities on a company-by-company basis. These methods would be administratively onerous for multiemployer EPFs that encompass a large number of companies and have frequent changes in their enrollment. Simplified administration procedures would consequently need to be devised.
- Many EPFs set a high assumed interest rate at their inception in accord with the then-prevailing asset management environment but have never revised it. Such EPFs should now lower their assumed interest rates. From the standpoint of promoting sound pension finances, it is advisable to ease benefit reduction requirements as discussed above to make it easier for EPFs to lower their assumed interest rates.
- When a company exits a multiemployer EPF, it must make a lump sum contribution equivalent to its share of any funding deficit. This rule serves to prevent companies from exiting EPFs. However, EPFs are not necessarily able to collect the full amount of the pro rata funding deficit. Many EPFs calculate funding deficits based on valuations as of the most recent fiscal year-end. Such EPFs may not fully collect subsequently accrued liabilities. Additionally, exiting companies' existing pensioners remain with the EPF. Other companies consequently must bear the burden of subsequently accrued liabilities. It is therefore necessary to allow companies to alleviate their pension cost burden as much as possible without having to exit their EPF. For example, we suggest making contributions

more flexible through such means as granting temporary exemptions from contribution increases when a company cannot feasibly bear the cost and charging a contribution surcharge when the company can afford to make increased contributions.

- Merging of EPFs and absorption of tax-qualified pension plans by EPFs could be effective means of enhancing the stability of pension finances by expanding EPFs' enrollment and assets.

(6) Measures in Response to Abolishment of Tax-Qualified Pension Plans
Tax-qualified pension plans, a type of defined-benefit (DB) corporate pension plan originated three years before EPFs, are slated to be abolished. Companies with tax-qualified pension plans must convert them to another type of plan or otherwise terminate them by March 31, 2012. Among companies enrolled in multiemployer EPFs, quite a few have tax-qualified pension plans and are undecided about what to do with them. Tax-qualified pension plans can be converted or merged into EPFs, but the following points must be taken into consideration.

- Multiemployer EPFs can maintain fairness in distributing the contribution burden among companies by setting contribution levels by benefit component and managing their assets segregated by benefit component. However, doing so would entail considerable administrative costs.
- Assets absorbed from tax-qualified pension plans could conceivably be used to fund the required remittance of minimum actuarial reserves to the Pension Fund Association upon dissolution of an EPF.
- Because EPFs are required to provide a certain minimum portion of their pension benefits in the form of life annuities, they may be subject to restrictions when absorbing tax-qualified pension plans, many of which provide fixed-term annuities only.
- By absorbing many tax-qualified pension plans, an EPF could expand its scale and stabilize its finances.

Additionally, it is legally possible for a multiemployer EPF to establish an adjunct multiemployer DB plan in accord with the Tax-Qualified Corporate Pension Act, but doing so would be costly and the pool of assets would not be large enough to operate as a multiemployer EPF unless the EPF absorbed a sizable number of tax-qualified pension plans.

(7) Other Issues
(i) Delinquent Contributions
EPFs must meet their benefit obligations even if their employer participants are delinquent in paying contributions. If unable to collect delinquent contributions, an EPF would incur a funding deficit. Additionally, a company delinquent in paying contributions cannot be expelled from an EPF unless it pays its share of any funding deficit as a lump sum. EPFs have no recourse but to wait until delinquent contributions are collectible. If a participant company goes bankrupt, other participant companies must assume its share of any funding deficit. Because of the possibility of such a scenario, multiemployer EPFs need an organizing entity with strong leadership and oversight capabilities.

(ii) Recommended Asset Management Approach for Multiemployer EPFs
With respect to the substitutional portion of EPFs' benefit obligations, pension finance neutralization measures are structured to obviate the need for increased contributions if an EPF earns investment returns equivalent to the EPI Reserve Fund's rate of return. EPFs consequently need not assume much risk to fund the substitutional portion of their benefit obligations.
For benefit components other than the substitutional component, EPFs could assume a moderate degree of risk, but their participant companies typically vary in their ability to make contributions. It consequently may be pragmatic for EPFs to assume limited risk in managing their assets.

5. Future Simulations
We simulated EPF funding levels under two scenarios. The results are as follows.
Assumptions:
- Future contribution rate = current contribution rate

- Interest rate applied to minimum actuarial reserves
  2009: -3.54%, 2010: -6.83%,2011 onward: 2.90%
- The timelag with which interest rates are applied to minimum actuarial reserves has been adjusted for.
- Simulation period: 30 years from April 1, 2009

Ⅰ. Example of an EPF with an average funding level at the end of the fiscal year (March 31, 2009)

Fiscal year	Expected rate of return : 5.5%					Expected rate of return : 5.0%			Expected rate of return : 4.5%		
	Net asset	Actuarial liability before adjustment	Funding level	Actuarial liability after adjustment	Funding level	Net asset	Funding level	Funding level	Net asset	Funding level	Funding level
	A	B	A/B	C	A/C	A'	A'/B	A'/C	A"	A"/B	A"/C
2008	73,990	114,042	0.649	100,000	0.740	73,990	0.649	0.740	73,990	0.649	0.740
2009	76,522	110,460	0.693	102,430	0.747	76,159	0.689	0.744	75,791	0.686	0.740
2010	78,977	106,019	0.745	103,765	0.761	78,221	0.738	0.754	77,456	0.731	0.746
2011	81,127	107,133	0.757	104,809	0.774	79,945	0.746	0.763	78,761	0.735	0.751
2012	82,832	107,884	0.768	105,493	0.785	81,193	0.753	0.770	79,559	0.737	0.754
2013	84,371	108,512	0.778	106,053	0.796	82,245	0.758	0.776	80,140	0.739	0.756
2014	85,705	108,950	0.787	106,421	0.805	83,061	0.762	0.780	80,454	0.738	0.756
2015	86,932	109,284	0.795	106,682	0.815	83,737	0.766	0.785	80,607	0.738	0.756
2016	88,238	109,690	0.804	107,013	0.825	84,458	0.770	0.789	80,778	0.736	0.755
2017	89,453	110,003	0.813	107,248	0.834	85,051	0.773	0.793	80,790	0.734	0.753
2018	90,609	110,259	0.822	107,424	0.843	85,548	0.776	0.796	80,680	0.732	0.751
2019	92,014	110,722	0.831	107,803	0.854	86,259	0.779	0.800	80,753	0.729	0.749
2020	93,583	111,332	0.841	108,329	0.864	87,090	0.782	0.804	80,911	0.727	0.747
2021	95,303	112,046	0.851	108,956	0.875	88,027	0.786	0.808	81,142	0.724	0.745
2022	97,359	113,002	0.862	109,824	0.887	89,251	0.790	0.813	81,627	0.722	0.743
2023	99,525	114,035	0.873	110,768	0.898	90,533	0.794	0.817	82,127	0.720	0.741
2024	101,818	115,128	0.884	111,770	0.911	91,887	0.798	0.822	82,657	0.718	0.740
2025	104,425	116,434	0.897	112,975	0.924	93,494	0.803	0.828	83,398	0.716	0.738
2026	107,203	117,823	0.910	114,261	0.938	95,207	0.808	0.833	84,197	0.715	0.737
2027	110,221	119,365	0.923	115,699	0.953	97,097	0.813	0.839	85,123	0.713	0.736
2028	113,391	120,958	0.937	117,186	0.968	99,065	0.819	0.845	86,077	0.712	0.735
2029	116,713	122,604	0.952	118,725	0.983	101,112	0.825	0.852	87,049	0.710	0.733
2030	120,199	124,294	0.967	120,303	0.999	103,246	0.831	0.858	88,050	0.708	0.732
2031	123,851	126,051	0.983	121,947	1.016	105,459	0.837	0.865	89,070	0.707	0.730
2032	127,567	127,795	0.998	123,573	1.032	107,643	0.842	0.871	89,997	0.704	0.728
2033	131,344	129,500	1.014	125,159	1.049	109,794	0.848	0.877	90,824	0.701	0.726
2034	135,156	131,132	1.031	126,663	1.067	111,883	0.853	0.883	91,519	0.698	0.723
2035	138,997	132,647	1.048	128,045	1.086	113,892	0.859	0.889	92,062	0.694	0.719
2036	142,720	133,927	1.066	129,194	1.105	115,675	0.864	0.895	92,301	0.689	0.714
2037	146,161	134,840	1.084	129,967	1.125	117,061	0.868	0.901	92,069	0.683	0.708
2038	149,314	135,346	1.103	130,335	1.146	118,037	0.872	0.906	91,350	0.675	0.701

Ⅱ. Example of an EPF with a funding level at about the 20th percentile among all of our clients at the end of the fiscal year (March 31, 2009)

Fiscal year	Expected rate of return : 5.5%					Expected rate of return : 5.0%			Expected rate of return : 4.5%		
	Net asset	Actuarial liability before adjustment	Funding level	Actuarial liability after adjustment	Funding level	Net asset	Funding level	Funding level	Net asset	Funding level	Funding level
	A	B	A/B	C	A/C	A'	A'/B	A'/C	A"	A"/B	A"/C
2008	65,104	114,342	0.569	100,000	0.651	65,104	0.569	0.651	65,104	0.569	0.651
2009	65,111	108,309	0.601	99,908	0.652	64,794	0.598	0.649	64,476	0.595	0.645
2010	64,976	101,722	0.639	98,947	0.657	64,328	0.632	0.650	63,680	0.626	0.644
2011	64,506	100,582	0.641	97,726	0.660	63,511	0.631	0.650	62,523	0.622	0.640
2012	63,644	99,156	0.642	96,218	0.661	62,288	0.628	0.647	60,948	0.615	0.633
2013	62,790	97,762	0.642	94,739	0.663	61,060	0.625	0.645	59,359	0.607	0.627
2014	61,806	96,338	0.642	93,228	0.663	59,686	0.620	0.640	57,615	0.598	0.618
2015	60,789	94,919	0.640	91,718	0.663	58,266	0.614	0.635	55,813	0.588	0.609
2016	59,984	93,700	0.640	90,406	0.664	57,041	0.609	0.631	54,197	0.578	0.599
2017	59,169	92,546	0.639	89,156	0.664	55,789	0.603	0.626	52,542	0.568	0.589
2018	58,389	91,450	0.638	87,962	0.664	54,554	0.597	0.620	50,892	0.556	0.579
2019	57,905	90,616	0.639	87,027	0.665	53,596	0.591	0.616	49,505	0.546	0.569
2020	57,553	89,969	0.640	86,276	0.667	52,748	0.586	0.611	48,212	0.536	0.559
2021	57,292	89,430	0.641	85,629	0.669	51,966	0.581	0.607	46,971	0.525	0.549
2022	57,379	89,164	0.644	85,252	0.673	51,508	0.578	0.604	46,036	0.516	0.540
2023	57,498	89,000	0.646	84,975	0.677	51,054	0.574	0.601	45,086	0.507	0.531
2024	57,723	88,923	0.649	84,780	0.681	50,677	0.570	0.598	44,193	0.497	0.521
2025	58,272	89,074	0.654	84,811	0.687	50,590	0.568	0.597	43,568	0.489	0.514
2026	58,894	89,343	0.659	84,956	0.693	50,544	0.566	0.595	42,959	0.481	0.506
2027	59,677	89,719	0.665	85,203	0.700	50,621	0.564	0.594	42,447	0.473	0.498
2028	60,570	90,184	0.672	85,538	0.708	50,767	0.563	0.593	41,980	0.465	0.491
2029	61,540	90,710	0.678	85,929	0.716	50,950	0.562	0.593	41,521	0.458	0.483
2030	62,650	91,317	0.686	86,398	0.725	51,229	0.561	0.593	41,125	0.450	0.476
2031	63,992	92,080	0.695	87,018	0.735	51,693	0.561	0.594	40,883	0.444	0.470
2032	65,437	92,927	0.704	87,718	0.746	52,208	0.562	0.595	40,659	0.438	0.464
2033	67,025	93,857	0.714	88,498	0.757	52,813	0.563	0.597	40,488	0.431	0.458
2034	68,723	94,858	0.724	89,344	0.769	53,471	0.564	0.598	40,331	0.425	0.451
2035	70,520	95,905	0.735	90,231	0.782	54,166	0.565	0.600	40,172	0.419	0.445
2036	72,299	96,935	0.746	91,097	0.794	54,779	0.565	0.601	39,890	0.412	0.438
2037	73,995	97,885	0.756	91,877	0.805	55,244	0.564	0.601	39,415	0.403	0.429
2038	75,615	98,712	0.766	92,529	0.817	55,562	0.563	0.600	38,750	0.393	0.419

Noteworthy findings from the results are as follows.
- In simulation Ⅰ, if the rate of return is 5.5%, the funding level will recover to sound levels.
- In simulation Ⅰ, if the rate of return is 5.0%, the funding level will gradually increase.

- In simulation Ⅰ, if the rate of return is 4.5%, the funding level will gradually decrease.
- In simulation Ⅱ, if the rate of return is 5.5%, the funding level will gradually increase.
- In simulation Ⅱ, if the rate of return is 5.0%, the funding level will gradually decrease.
- In simulation Ⅱ, if the rate of return is 4.5%, the funding level will decrease.
- If the rate of return is 4.5% (i.e., higher than the interest rate of 2.9% applied to minimum actuarial reserves), the overall funding level will decrease even though investment returns in excess of the assumed interest rate can be expected on the substitutional component.
- EPFs whose investment returns substantially underperformed the assumed interest rate in the fiscal years ended March 31, 2008 and 2009, and who are underfunded relative to the average funding level may find it difficult to recover the funding deficit in future if they do not use contributions to amortize part of the investment return shortfall.
- A 5.5% return over the long term appears unrealistic in the current asset management environment, so it is advisable to lower assumed interest rates, thereby lowering contributions and raising funding levels above their current level.

6. Conclusion

EPFs have the potential to function effectively as catch-all pension plans for SMEs unable to independently sponsor a corporate pension plan. With Japanese society progressively aging, EPFs can amply fulfill the role of supplementing public pension benefits.
For EPFs to proliferate and develop further, the EPF scheme must be periodically improved as needed and the government must comprehensively protect the EPF scheme in the interest of social security.

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