

Consideration of the characteristics of pension liabilities and measurement methods

Iizuka Hiroshi

Deloitte Touche Tohmatsu
Financial Industries Group

PCPM Bld. 1-11-1, Marunouchi, Chiyoda-ku, Tokyo 100-6211. Japan

E-mail : hiroshi.iizuka@tohatsu.co.jp

(Tel) +81-3-6213-3210

(Fax) +81-3-6213-1885

Uemura Tomokazu

Deloitte Touche Tohmatsu
Financial Industries Group

PCPM Bld. 1-11-1, Marunouchi, Chiyoda-ku, Tokyo 100-6211. Japan

E-mail : tomokazu.uemura@tohatsu.co.jp

(Tel) +81-3-6213-1468

(Fax) +81-3-6213-1885

Abstract:

Nowadays, pension plans recognize several different liabilities for one plan because the pension liabilities are evaluated with several standards - one for accounting purposes, and others for funding regulations. Therefore, the implication of understanding the funding status or the result of the plan amendment decision will change due to the selection of the liability being considered. In this paper, we will categorize the characteristics of the pension liabilities, and discuss the effectiveness of the measurement methods (mainly how to determine the discount rates) to meet those characteristics. We will start with the review of pension liabilities based on accounting standards and the pension funding regulations in Japan, which covers the historical introductory process of those measurement rules including a detailed analysis. Based on these considerations about Japanese post-retirement plans, we hope to provide suggestions that will be useful for future discussions about accounting standards for pension and post-retirement benefits.

Keywords:

Accounting standards (Japan), pension liability, measurement method, discount rates

Section I. Introduction

The liabilities of post-retirement plans can be classified into several types. These liabilities have different amounts in each plan because the measurement methods are different. For liabilities of post-retirement plans, it is important to understand how to measure each liability. In other words, understanding the differences of the characteristics between one liability and another, and the selection of a suitable liability, will lead to an effective discussion and the right decision.

For instance, the post-retirement liability for accounting purposes is the present value as of the measurement date (the balance sheet date) of the accrued benefits which are expected to be paid in the future. On the other hand, the liability for the funding is the reserve to meet future payments with future contributions and expected return on plan assets, based on the assumption when the plan is continued. From another perspective, this liability can be described as the reserve supposed to have been funded under the original schedule. In the first case, the liability is a debt for the accrued portion of the certain future expenses, so this liability can be regarded as the obligation of future payments as of the measurement date. In the latter case, the liability is the reserve for the future payments measured by the present assumption. By comparing this liability to the plan assets, we are able to check if the present reserve is sufficient to meet the future benefit payments. Of course, there are other types of liabilities to discuss such as the reserve which satisfies the total payments if the plan is terminated at the measurement date. In many cases, this discontinuous type of liability is measured by regulated methods enforced by the government. And in some cases, because of the similarity of the characteristics of liabilities, the measurement methods have some resemblance.

As mentioned above, there are some entirely different types of liabilities in one plan. The liabilities which are taken into consideration during investment assessments or during the decision to make some amendments to the plan are not the same. When considering the whole finance of the plan (both accounting and funding), it is necessary to take the accounting approach and not only the funding (or assets) approach. In these cases, it is important to discuss effectively the selection of which liabilities will be taken into account, to avoid unnecessary confusion. For instance, when the contribution amount is different from the expenses recognized in accounting, the reasonable assessment for the cash-flow level cannot be made by discussing the level of the

accounting expenses.

In this paper, we will overview some characteristics of post-retirement liabilities and the effectiveness of the measurement methods to meet these characteristics. The discussion in this paper is based on Japanese regulations, accounting standards and customs, however, we tried to exclude the uncommon matters to make the discussion as simple as possible. In addition, we will introduce some features of Japanese post-retirement plans, which have different characteristics from foreign plans, and also introduce the concept of “non-discounted liability”.

We will focus on how to determine the discount rate as the measurement method of post-retirement liabilities. This is to make the discussions simple and to make the essential point clear, for the measurement methods of post-retirement liabilities in most countries are regulated and have individual conditions or approaches. Further, we will discuss only the private sector post-retirement plans, which do not include public plans or social insurance.

The opinion in this paper presents the opinion of the authors. It does not necessarily reflect the views of Deloitte Touche Tohmatsu.

Section II. The characteristics of post-retirement liabilities and the discount rates used to measure the liabilities

i. Liability for accounting purposes

Liability for accounting purposes is useful in determining whether or not to make an investment.

From the accounting point of view, a post-retirement plan can be defined as a plan that will pay an expense which is predictable on some level for employees' service in the certain future where employees will receive their benefits after retirement or withdrawal.

Under Japanese accounting principles, when the following conditions are satisfied, an expense or loss should be booked as an allowance reserve in the balance sheet of the company.

- a. if a future expense or loss is scheduled for certain, and
- b. if the amount of that expense or loss can be projected with certainty, and
- c. if that expense or loss is related to the income of the fiscal year in which that expense or loss will be recognized.

The purpose of accounting for post-retirement benefits is to apply this rule to the expenses which are “the payments of post-retirement benefits” and to recognize the debt to meet the expenses. To apply this rule and measure the liability of post-retirement benefits, an amount of this liability will be a present value of an accrued portion of future payments as of a measurement date.

To measure this present value, the risk-free rate (or quasi-risk-free rate) will be used as a discount rate. In fact, while there are slight differences between FAS87, IFRS17 (IAS19) and Japanese GAAP, the yield of low default risk bonds (or the corresponding yield) used to determine the discount rate for accounting purposes is quite similar. From the accounting point of view, which is to discount an expense for future payments to a present value, the fundamental idea is that the discounting process should only reflect the time value of money.

ii. Liability for funding

In Japan, the defined benefit pension plans are regulated by the government under two standards to secure sound management of the plans. The two standards are for continuation and for discontinuation.

a. Liability for continuous standards

Valuations for continuous standards are based on the assumption that the plans will be continued. To determine the level of contributions in order to meet the future payments and to see whether or not the reserves are sufficient, the liability will be compared to the amount of pension assets. To check the condition of the funding, under continuous standards the level of contribution and/or the amount of pension assets are the point of focus. Therefore, the projection of the return on assets is one of the most important factors for continuous standards. Further, the discount rate to measure the liability for continuous standards is required to be based on the projection of long-term return on assets. Because the pension funds are required to maintain the sound balance of liability and assets in future years, the “long-term” projection is necessary. While the liability for accounting purposes is based on future

payments, the liability for funding is based on return on assets. Thus, reflecting the characteristics of the liability, the discount rates are determined by a different basis.

Since the plan assets are focused in funding finance, the discount rate for funding finance can be determined higher than that for accounting purpose, when the asset allocation share of high yield assets, like stocks, is relatively large. The higher the discount rate for funding finance is the lower the contribution amount will be. Under the accounting standards, if the amount of plan assets goes short compared to the liability, the plan sponsors have to book allowance reserve to satisfy the shortage. To avoid this happen, the effects on accounting aspects should be taken into consideration even when determining the discount rate for funding finance.

While the discount rate for the continuous standards can be determined based on long-term return on assets by the company itself, some regulators have lower bound of discount rates in order to avoid too large expenses from rather high contribution. In Japan, the lower bound is determined as “the lower rate of 1 or 5 years average of 10 years Japanese Government Bond Subscribers’ yield”.

Chart1; The lower bounds of discount rate for Japanese Defined Benefit Corporate Pension plans’ continuous standards

Fiscal Year (form April to March)	Discount Rate (%)
2002	1.20
2003	1.20
2004	0.90
2005	1.30
2006	1.20

b. Liability for discontinuous standards

Valuations for discontinuous standards are based on the assumption that the plans will be terminated at the measurement date. When a post-retirement plan is terminated, the plan assets will be distributed based on the liability which meets the accrued benefits of past service period (in Japan this is referred to as “the amount of Minimum Funding Standard”). When the plan assets fall short compared to the discontinuous liability, the plan sponsors have to make some contribution in

addition to the contribution calculated by the continuous standards.

If a plan is terminated, employees have to manage and invest their distributed assets by themselves. Since it is difficult for individual employees to manage the assets equal to the entire plan, the amount of distributed assets should be equal to the accrued benefits even when employees manage them by risk-free assets such as bank deposits or the government bonds. Therefore, the discount rate for discontinuous standards is determined by the yield of risk-free assets. In Japan, the discount rate for discontinuous standards is regulated by the government and is determined as “based on the 5 years average of 30 years Japanese Government Bonds Subscribers’ yield”.

Chart2; Discount rates for Japanese Defined Benefit Corporate Pension plans’ discontinuous standards

Fiscal Year (form April to March)	Discount Rate (%)
2002	2.50
2003	2.23
2004	2.29
2005	2.20
2006	2.17

Even though the purpose of both the continuous and the discontinuous standards is to fund the sufficient level of assets to meet the future payments of the post-retirement benefits, the basis of assumption is different. Therefore, there are differences in the projection of long-term return on assets and the determination of the discount rates. If the discount rate for continuous standards is higher than that of discontinuous standards, the plan assets will be at a sufficient level under the continuous standards and will be insufficient under the discontinuous standards. Based on the fact that such aforementioned situations can happen, the consideration for discontinuous standards will also be necessary in determining the discount rate for continuous standards.

Section III. Overview of Japanese post-retirement plans and “non-discounted liability”

In this section we will introduce typical Japanese post-retirement benefit plans, and also a “non-discounted liability” which is related to some characteristics of Japanese post-retirement benefit plans.

The post-retirement benefit plans of Japanese companies are historically based on lump-sum payments. These plans pay the benefits in lump-sum at the time of the employees’ retirement or withdrawal, with no payments afterwards. In our opinion, a number of reasons why such plans prevail in Japan are: a) the relatively large amount of public pension could cover the living expenses for the aged; b) the delayed regulation of corporate pension systems (which were placed into effect in the 1960s); and c) the needs of temporary money to refund mortgages. Nowadays, these customary practices of lump-sum payments still remain, and many retirees receive their benefits from the company in lump-sum. On the other hand, after the enforcement of the corporate pension laws and due to the reduction of the public pension, many companies have made their retirement benefits be able to be paid as pension. For most of these companies’ post-retirement plans, the pension resources are the amount of lump-sum, and the payments as pension are one of the options of several payment methods. In fact, most plans still pay the retirement benefits only in lump-sum to short-term employees. To receive payments as pension, employees need to have long-term service or retire after a certain age. Under the Japanese regulation of corporate pension, the benefit payment as pension is required only for employees with more than 20 years of service.

Due to such circumstances, the Japanese corporate pension plan benefits are often calculated primarily in lump-sum, and this becomes the amount of pension resources. The connection between lump-sum and pension is as follows: the companies (or plans) keep the lump-sum benefit instead of paying on the retirement day, and pay the benefit as pension from the saved lump-sum (pension resources) while managing this lump-sum with other plan assets. Although there are some regulations, the projected yield for these pension resources can be determined by the companies themselves separately from the yield for the entire plan assets. Usually, since the pension resources are managed in the same portfolio as the entire plan assets, the projected yield for the pension resources tends to be the same rate as for the entire plan assets. However, to make the benefits paid as pension more “service rewarding” benefits, some companies set this projected yield higher than that for the entire plan assets. Of course,

the higher the projected yield, the higher the costs will be for the same amount of pension resources, so the companies have to make the investments more effective.

Since many Japanese post-retirement benefit plans are based on lump-sum payment as mentioned above, the liabilities for accounting purposes of these lump-sum only plans were once measured by the “non-discounted” total amount of the lump-sum as of the measurement date (in fact, relatively small companies are still allowed to measure their liabilities by this method). For the plans which do not pay benefits as pension at all, this “non-discounted liability” is the very amount of the accrued benefits as of the measurement date. So there were concrete reasons why this liability was to be recognized as a liability for post-retirement benefit plans. But in present-day Japan, the liabilities for post-retirement plans are measured the same as FAS87 and IFRS17 (IAS19) by the projected credit unit method. One of the problems of this “non-discounted liability” is that many Japanese plans reduce the benefit amount for short-term retirees as penalty and treated long-term retirees favorably as a reward for service, so the “non-discounted” total amount of lump-sum became to be regarded as the underestimated liability. In fact, since the “non-discounted liability” cannot reflect the future increase of the benefit, the amount of this liability will increase rapidly as the employees’ service years’ increase in the case where the benefits formula of the plan is “back-loaded”. In the case where the benefits are attributed by the benefit formula, the amount of the liability will increase rapidly for these “back-loaded” plans even when the liability is measured by the projected credit unit. Even worse, the amount of the liability will be less than the “non-discounted liability” because of the discounting process. The amount of liability less than the total amount of accrued benefit as of the measurement date might not reflect the actual status of the plan. In fact, for the “back-loaded” plans such as the unfavorable plans for short-term retirees and the favorable plans for long-term retirees, the benefit attribution will be based on a straight-line service year basis, and such situations with less liability would rarely happen.

Graph1; A typical Japanese “back-loaded” plan’s benefit curve

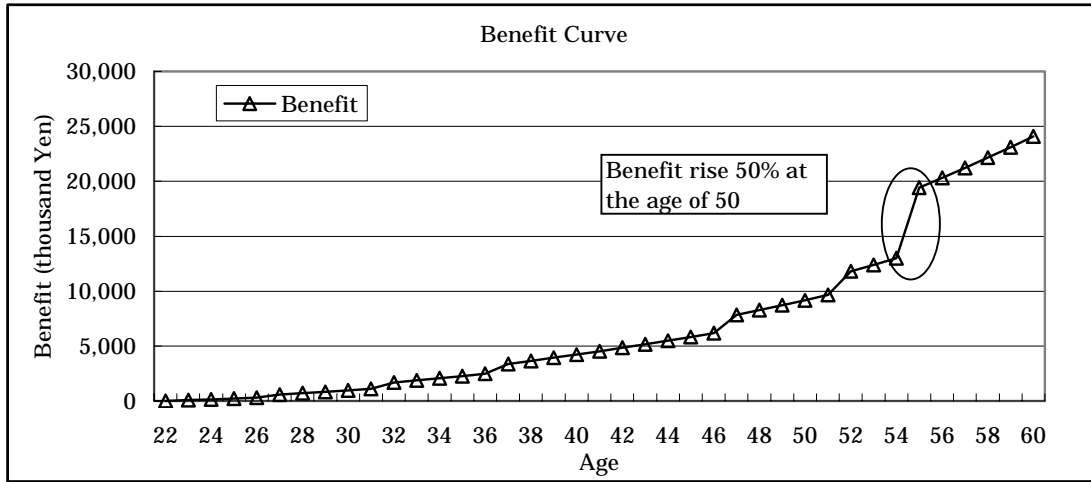


Chart3; Examples of liabilities for lump-sum payments

<discount rate=3.0%>

(Million Yen)

	Projected Benefit Obligation (benefit formula)	“Non-discounted liability” (*)
Amount	577	676

(Under the benefit curve described on Graph1)

(* The amount which, hypothetically, would be paid if all the employees were to terminate the employment)

In addition, this “non-discounted liability” has another problem for the plans which pay benefits as pension, even if the pension resources are based on the lump-sum amount. The problem is the difference between the projected yield for the pension resources and the discount rate. When the projected yield for the pension resources is higher than the discount rate, the present value of the benefit as pension payments will be larger than the amount of pension resources.

To regard the “non-discounted liability” as a reasonable liability for accounting, the lump-sum based plans should satisfy the following requirements:

- 1-a. benefits are not “back-loaded” excessively
- 1-b. when the plan can pay benefits as pension, the projected yield for the pension resource is related to the discount rate.

Cash-balance plans might almost meet these requirements. In this paper, cash-balance plans are the plans where benefits are based on the accumulated amount of pay credits

and interest credits determined by a certain rule in each employee's hypothetical account. While cash-balance plans can pay benefits as pension, the amount in the hypothetical account is based on a lump-sum. Therefore, cash-balance plans can be categorized to be one of the lump-sum based plans like many Japanese post-retirement benefit plans.

Since the benefits of cash-balance plans are not "back-loaded" excessively because of the benefit formula, most of the cash-balance plans' benefits would meet the requirement 1-a. So, what is the relation between the projected yield (interest credit rate) for the pension resources (the amount of hypothetical account) and the discount rate? Can they meet requirement 1-b?

In Japan, the interest credit rates are to be set as one of the following:

2-a. constant rate

2-b. variable but reasonably projectable rate, like Japanese Government Bonds yield or other objective index (for instance, the national consumer price index or average wage index)

2-c. combination of 2-a and 2-b

2-d. 2-b or 2-c with upper and/or lower limits.

In Japan, most cash-balance plan' interest credit rates are determined by 2-b or 2-c. If the interest credit rate is set by the Japanese Government Bond yield, the pension resources will accrue the interest from a risk free rate the same as the discount rate. Therefore, in this case, the likelihood of satisfying requirement 1-b will be high. In fact, one of the most popular reasons for adopting cash-balance plans in Japan is the relation between the discount rate and the interest credit rate.

Section IV. Conclusion

In this paper, we have overviewed the characteristics of liabilities for post-retirement benefits and the determining methods of the discount rates for each liability. We have pointed out that the discount rates are determined by two main approaches: the liability approach which reflects the concept of accounting, and the assets approach which reflects the concept of continuity of funding. It is important to understand the differences between the two approaches. For instance, the discount rates under the

assets approach are controllable to some extent while the discount rates under the liability approach are risk free rates and uncontrollable. We think clear understanding of such differences would contribute to effective discussions, especially with the client companies and plan sponsors.

In Section III of this paper, the typical features of the Japanese post-retirement benefit plans were introduced and we raised the issue of “non-discounted liability”. Discussing the features of the traditional Japanese lump-sum based post-retirement benefit plans, we pointed out the similarity of lump-sum based plans and cash-balance plans. Recently, problems regarding the measurement method of cash-balance plans for accounting purposes have become a topic of concern. This issue has drawn much attention such as the exposure draft D9 of IFRIC and the reviewing project of pension accounting at FASB. We think the problems have arisen from the concept of the cash-balance plan itself. That is, we think the measurement methods of liabilities, such as the projected credit unit method, are based on the post-retirement plans where benefits are based on pension payments. It is somewhat difficult to apply several concepts included in such measuring methods to the lump-sum based post-retirement benefit plans, such as typical Japanese plans and cash-balance plans. In fact, in IFRIC’s exposure draft D9, the “non-discounted liability” was adopted to be the liability of cash-balance plans under certain conditions. We expect the Japanese actuaries who are familiar with the lump-sum based post-retirement plans and the “non-discounted liability” to assist in these discussions.