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*Pension funds and retirement benefits in the depressed economy and market
--Experience and challenges in Japan*

Abstract

For more than a decade, company retirement benefit plans in Japan, especially defined benefit pensions, have been struggling through hardships. Because of poor investment returns, increasing benefit obligations newly disclosed on balance sheets, and declining business profitability, plan sponsors have been forced to overhaul their plan's benefit design. This paper discusses characteristics of their countermeasures.

In seeking to alleviate financial burdens, the primary countermeasures of plan sponsors have been to: (a) transfer or at least share investment risks with employees, and (b) reduce benefit obligations outright. The introduction of cash balance plans and defined contribution plans are examples of the first countermeasure, while the second has been pursued by returning the contracted-out portion of benefits to the government.

Throughout this period, public policies for retirement benefit plans have been increasingly relaxed. From the viewpoint of protecting benefit rights and preventing moral hazard, these forbearance policies could be criticized as being suboptimal. On the other hand, we argue that the government inevitably had to take these policies to help plan sponsors cope with unforeseen macroeconomic shocks and avoid the termination of pension plans.

Introduction

Since 1990s, company pension plans in Japan have been struggling with serious problems. Because of the macroeconomic shock in the 1990s, the return on pension fund investment has been distressingly low ever since. Plan sponsors have lost confidence in business, and employment and compensation systems have been under review across the board. On top of that, a change in accounting rules has increased plan sponsors' concerns about the exposure of pension and retirement benefits in financial statements.

In order to cope with these problems, the way pension funds are managed has been under continuous change. Especially notable are the increasing variety of benefit design and the adjustment of benefit amounts.

Accompanying this reform movement on the plan side are changes in regulatory rules on pensions. The Japanese Government had little choice but to relax rules concerning change in benefit design and transformation to defined contribution plans and cash balance plans.

In spite of those efforts, problems remain and, with regard to any of the available

pension plans, neither plan sponsors nor government can stop their endeavor. For better or worse, these experiences can become valuable precedents for the future of pension funds and regulatory authorities in any countries.

In Section 1, we describe the current picture for pension funds and their role in overall retirement benefits. Section 2 explains the surrounding factors that brought about the current predicament. Section 3 focuses on countermeasures taken by pension plans and plan sponsors and Section 4 discusses changes in the government's regulatory policies. Section 5 presents a summary and discusses implications for the future.

1. Pension Plans in Japan

1.1. Two types of defined benefit plans

For Japanese employees, both public pensions and private benefit plans provide retirement benefits. As Chart 1 shows, public pensions for employees consist of a fixed component from the National Pension Insurance (NPI) and an earnings-related component from the Employees' Pension Insurance (EPI). For employees with an average earnings record and spouse, the total of these two benefits is equivalent to 59% of the current average wage after tax.

In addition, employers also provide retirement benefits. These consist of two types—lump-sum severance payments that employees usually receive upon termination of employment, and old age occupational pension plans. Originally, all retirement benefits were lump-sum severance payments. In 1956, according to a study by the Ministry of Health Labor, and Welfare, 97 percent of businesses with 500 employees or more, and 60 to 70 percent of smaller businesses, had severance payment plans explicitly stated in their labor contracts.

At first, funding for severance payment plans was supplied not from externally accumulated assets, but from book reserves. As severance payments became a general practice, however, an increasing number of large companies began to introduce pension benefits that used externally accumulated assets for funding.

As a result, in 1962 Tax Qualified Pension Plans (TQPPs) were introduced as a type of defined benefit pension plan, for which contributions were recognized as expenses for tax purposes.

In 1966, when EPI was raised from a trivial level to 10,000 yen per month, employers were allowed to establish EPFs to undertake the tasks of administration and management of the income-related portion of Employees' Pension Insurance. This measure, called contracting-out, was adopted to accommodate management's demand to streamline the dual burdens of social security tax and employer's contribution to pension plans.

1.2. Regulation on pensions

Due to the contracted-out portion, EPFs came to be treated as a quasi-public pension that is tightly regulated. The government stipulated detailed rules for administering and

managing EPFs. For example, plan sponsors have been required to add their own benefits worth at least 30% of the contracted-out portion, and must distribute at least half of this in the form of an annuity unless pensioners request payment in lump sum. Also, employers must entitle all employees with at least five years of tenure to membership in its EPF, and, for those with 20 years of membership, to rights to receive pension benefits. EPFs must have at least 500 participants,¹ and must treat them equitably.

The government also prescribed actuarial assumptions for EPFs to use. For example, the discount rate was fixed at 5.5% per annum from the time of inception in 1966 through 1997 (when this regulation was changed).

There were two major regulations regarding investment management. One was the legal list of asset allocation, and the other was the exclusive use of trust banks and insurance companies for fund management.

One exception of this strict regulatory framework for EPFs was the minimum funding rule. The amount of actuarial liabilities was to be calculated assuming continuity of pension plans. The minimum funding rule for the termination liabilities did not come into effect until 1997. Until then, there were no rules to examine the current level of funding and require sufficient funding for benefits to be paid in cases of plan termination.

Furthermore, all unfunded actuarial liabilities including past service liabilities and actuarial losses could be amortized over a period as long as 20 years. On the other hand, the maximum portion of the funding shortage that can be amortized in one year or the shortest period for such amortization has been legally restricted, all of which placed limitations on early funding.

One reason for this leniency in funding rules was because losses in tax revenue were a larger concern for the government. In the case of EPFs, taxes on employer/employee contributions as well as income generated from pension assets have been deferred. The government tried to discourage excessively large contributions.

Regulations for TQPPs have been similar to, but somewhat more permissive than, those applied to EPFs. TQPPs do not have to provide annuities, and the minimum membership is only 15 participants. Funding rules were also more lax with no funding requirement for termination liabilities. With regard to taxes, however, only taxes on employer contributions were deferred.²

1.3. Pension's role as a reserve for severance payment

As of March 2002, there were 1,801 EPFs with 11.6 million active participants, compared to 78,157 TQPPs with 9.7 million active participants (Table 1). Taking into account duplication, the total number of participants in TQPPs and EPFs is approximately 17 million, which equals 35% of total employment in the private sector.

¹ Plan sponsors of EPFs can be classified into three categories: single employer, multiple employers of affiliated companies, and multiple employers in the same industry or local area. Their minimum number is 500, 800, and 2000 respectively.

² Employees' contributions, if any, have been classified as a life insurance premium, and 1.0% of the asset value is assessed annually as a special corporate tax.

<Please put in Table 1 here. >

89% of employers in the private sector provide retirement benefits. 89% of regular employees, which equals 69% of the total workforce, are covered by retirement benefit plans in one form or other.

The difference in coverage between pension plans (35%) and all retirement benefits (69%) means that 34% of employees are covered only by severance benefits with book reserve funding. Even among large employers with more than 1,000 employees, only about half have at least a portion of retirement benefits funded as pension plans, and the rest of benefits remain book reserve plans.

Contributions made for pensions are recognized as expenses for tax purposes, and the derived interest on EPF assets is also tax exempt.³ From the perspective of corporate finance, a funded pension system has more favorable tax treatment than a book reserve system. This tax advantage of pension plans should help generate a higher valuation of plan sponsors' stock.

Nonetheless, management has been less than enthusiastic towards introducing a pension system and making contributions for funding liabilities. Possible reasons for this include a desire to lessen the investment risks of depressed asset prices or to retain capital internally for future investment.

Furthermore, in the decumulation stage, both employers and employees have the perception that benefits should be paid in lump sum instead of as annuities. This is evidenced by the fact that 96% of TQPPs and 83% of EPFs allow beneficiaries to receive at least some portion of benefits in lump sum. In 1998, the percentage of beneficiaries receiving all benefits in lump sum was 59%, while 10% received a portion of benefits in lump sum.⁴

Usually, in the labor contract, the total severance payment value is determined by multiplying the final salary by the loading factor. The loading factor changes depending on the reason for severance (whether voluntary or involuntary), age at the time of job termination, and number of service years. The labor contract also stipulates how much of the aggregate amount is paid from pension plans. Beneficiaries can decide whether to receive benefits from pension plans in lump sum or in annuities. If they choose to receive the benefit in annuities, the pension plans convert that value into an annuity amount using the interest rate specified in the labor contract.

2. Changes in surrounding conditions in 1990s

As Table 1 shows, the number of TQPPs, EPFs and their participants have been declining since the late 1990s. The environment surrounding defined benefit pension

³ Although suspended until fiscal 2002, for Tax Qualified Pension Plans and defined contribution plans, a special corporate tax of 1.173% is assessed on outstanding assets.

⁴ Ministry Health Labor and Welfare (1998), *General Survey on Wages and Working Hours System*. Tax laws also support lump sum payment by treating it separately from other sources of taxable income, as well as allowing large income deductions.

plans has made them more difficult to maintain. Below we examine four factors contributing to this change—lower than expected return on pension investment, sluggish business conditions of plan sponsors, revision of compensation systems, and changes in accounting rules.

2.1. Lower than expected return on pension assets

Stock prices in Japan peaked at the end of 1989. From 1990 to 2002, the average rate of return of the Tokyo Stock Market Index (TOPIX) was -4.9% (Table 2).⁵ The return has been especially dismal since 1997. The TOPIX return was -6.9% and 4.8% in 1997 and 1998, respectively. The return reached 31% in fiscal 1999 supported by the global boom in technology and telecommunications stocks. After that, however, the index continued to decline again, recording -26.6% , -16.0% , and -27.3% in the three years from 2000.

<Please put in Table 2 here. >

Looking at other asset categories, the average return from 1997 through 2002 on fixed income securities and foreign bonds and foreign stocks were 3.3% , 7.2% , and 2.6% respectively. However, return from the first two assets could not compensate for the losses suffered from stock investment. As a result, the return on EPF funds was -0.8% during that period, and a mediocre 2.0% from 1990 through 2002 (Chart 1). The rate of return has recorded three straight years of negative performance since 2000.

<Please put in Chart 1 here. >

2.2. Sluggish business conditions of plan sponsors

The decline in stock prices is combined with the depressed profitability of plan sponsors' businesses. Had business conditions been good, employers could afford to increase contributions and maintain pension plans with the same level of benefits.

On the contrary, the average return on shareholders equity of non-financial large companies in every 5-year period has continued to decline from 7% during the period beginning 1987 and has reached almost zero in the last 5 years (Table 3).

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2.3. Revision of compensation system

Behind this declining profitability has been the rise in the labor distribution rate. At large corporations with paid-in-capital exceeding 1 billion yen, companies used to distribute 56% and 57.7% of their total value added to employees in the 1970s and 80s. However, this average share exceeded 60% in the 1990s and has hovered there since. We can see that increase on the right hand side of Table 4.

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This increasing share of labor can stand for two things—higher compensation costs and/or lower productivity of labor. Higher compensation costs have been brought about by

⁵ All figures concerning annual rates of return on securities and pension assets are for fiscal years from April 1 through March 31. EPFs' rate of return for fiscal 2002 is the preliminary estimate.

a seniority-based wage curve combined with a rising average age and longer tenure of employees. For example, in 1977, employees over the age of 50 comprised 1.6 % of total college graduate-level employees, and, of these, 17.5 % had tenure of at least 30 years. In the case of high school graduates, the share of those over the age of 50 was 1.6%, with 17.8% of those having tenure of 30 years or more.

Under practices of long-term employment, these figures continued to rise thereafter. In 2001, the shares of employees over the age of 50 were as high as 14.7% and 18.2% respectively and 43.4 % and 74.3% of those had over 30 years of tenure (Table 5). The result of this aging labor force combined with seniority-based wages has been growing personnel costs.

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Labor productivity could not keep pace with this increase in wages and compensation. The combination of seniority-based wages and long-term employment was very effective in improving productivity in the manufacturing process where numerous components were assembled—typically in the automobile industry. However, changes in the industrial structure—as can be seen in the rising share of output of tertiary industries and declining share of secondary industries—narrowed the range of markets where this feature can be fully exploited. Moreover, competitive challenges from China and other emerging economies lowered the profitability of this “best quality at reasonable prices” type of business.

These changes in both the denominator (personnel expenses) and numerator (productivity) of the labor distribution rate led to the revision of the compensation and employment system. Employers have begun to adopt merit-based wages in favor over seniority-based wages. The revision of retirement benefits needed to be consistent with this change.

2.4. Changes in accounting rules regarding retirement benefits

Although not as directly related to macroeconomic shocks as the three factors mentioned above, changes in accounting rules for retirement benefits in 2001 are the single most important factor hindering pension plan sponsors from maintaining retirement benefits, especially defined benefit plans.

In financial statements based on the previous accounting standards, employers' cash contributions were recorded as a periodic expense at the time contributions were made. No pension benefit obligation or provision was recorded as a liability on the balance sheet.

The treatment of severance payments was different. In the severance payment system, a certain percentage of total benefits was given the status of tax-free book reserve under the tax law, and recognized in reserves for retirement allowances. In this case, expenses during the current period amounted to the increase in the reserve balance from the end of the previous period.

Under the new accounting standards, adopted from the fiscal year ending after March 2001, the accrued liability for both pension and severance payments must be recorded on companies' balance sheets. For example, assuming an average length of

service of 30 years and total value of benefits paid at the time of retirement of 30 million yen, an obligation of 1 million yen—30 million yen divided by 30 years—is deemed to accrue annually, if we leave out interests for those obligations. The difference, if any, between the total present value of this projected benefit obligation and fair value of assets in pension plans, must be recorded on the liability side of the employer's balance sheet as a reserve for retirement allowances.

Examining the results of 1,024 companies listed on the First Section of the Tokyo Stock Exchange (with a total of 8.8 million employees),⁶ we find that, in the fiscal year ending March 2001, the retirement benefit obligation was 73.9 trillion yen. Against this, the fair value of pension assets was 39.9 trillion yen, or 54% of the obligation, leaving a differential of 34.0 trillion yen as unfunded liabilities. A significant portion of these liabilities consisted of transition obligations and actuarial losses that can be smoothed out and recorded over a long period.⁷ In fact, 23.2 trillion yen was recognized at once and recorded as a reserve for retirement allowances on balance sheets. Thus, the unrecognized liabilities that must be recognized in coming years amounts to 10.8 trillion yen.

On the income statement, periodic benefit costs amounted to 10.7 trillion yen. This amount corresponded to 56.6% of recurring profits (before taxes), which means profits would have been 1.5 times without benefits costs (see Table 6).

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In the next fiscal year (ending March 2002), periodic benefit costs declined by 42.2 % to 6.2 trillion yen, mainly because recognition of transition obligations shrank by 85% from the previous year. Benefit obligations, however, grew by 7.5% because of the discount rate decline reflecting lower market interest rates. Moreover, negative returns on assets exacerbated the funding status, for which increased contributions could not compensate. As a result, the net shortage of funds and the unrecognized portion of benefit obligations increased by 14.6% (4.9 trillion yen) and 32.8% (3.6 trillion yen) respectively.

It is too early to conclude that the large ballooning of unfunded liabilities is entirely the result of the stock price decline from the 1990s. The substantial share of book reserve systems in retirement benefits and the lax funding requirements for pension plans also contributed to this large amount of shortage.

Nonetheless, at this stage, 50% of benefit obligations is unfunded and that shortage amounts to 27.1% of plan sponsors' shareholders equity. Periodic pension costs run as high as 52.9% of recurring profits. We cannot overemphasize that the disclosure of such liabilities and expenses in financial statements under the new accounting rules, as well as the volatility of those amounts depending on changes in the discount rate and investment return, heightens the uneasiness of plan sponsors in their asset management.

3. Responses of pension plans and sponsors

⁶ We examined 1,024 non-financial companies for whom information on retirement benefits both at the end of March 2001 and 2002 were available.

⁷ The maximum period for recognition of transition obligations is 15 years, and the maximum period for recognition of actuarial losses is the employees' average remaining service period.

To cope with such increasingly difficult conditions, pension plans and their sponsors have taken several measures. These measures can be divided into three categories--asset management, benefit design, and (partial) termination of pension plans.

3.1. Sophistication of asset management

On the asset management side, sponsors have tried to upgrade their methods of asset management. As advocated by modern portfolio theory, portfolio and time diversification of risk has been gradually adopted by pension plans, and plan managers came to believe that diversified and long-term investment in stocks and other assets would heighten returns without incurring much additional risk.

For example, in just three years from 1996, the percentage of funds allocated to the domestic stock market increased from around 15.7 % to 36.5 % as shown in Table 7. Usage of specialized investment management firms increased in favor of balanced fund managers such as trust banks and insurance companies (Chart2). Attempts were also made to retain executives specialized in investment management.

<Please put in Table 7 and Chart 2 here. >

As the experience of the last five years in Chart 1 shows, however, it has been difficult to find a good solution on the asset management side. Stock prices went up globally in 1999, but plummeted thereafter. Doubts were cast not only on the level but also on the existence of the equity risk premium. While investment in fixed income bonds has generated a handsome rate of return, the possibility of capital loss has become very high because the current yield of 10-year government bonds is merely 0.5%. Investment in foreign securities was hindered by apprehension of exchange rate risks. Some large funds have sought to improve their rate of return by investing in alternative assets such as hedge funds, real estate and private equity. As the name implies, it is impossible for these alternative assets to obtain a major share in total assets.

3.2. Adjustment of benefit design

Because of this deadlock in asset management, employers turned their eyes to the liabilities or benefit design side. Some managed to reduce the benefit amount. Others tried to terminate defined benefit plans and introduce new types of pensions such as defined contribution plans and cash balance plans.

3.2.1. Reduction of benefits

More pension funds are reducing benefits each year. In 1997, the government stipulated conditions to allow benefit reductions. These conditions include the approval by two-thirds of plan participants and agreement by the labor union.⁸

The most notable pattern has been the reduction of annuity amounts by lowering the assumed rate of interest for conversion of severance payment into annuities. Recently, there have also been cases where the reduction is not limited to annuity amounts, which

⁸ The reason of reduction has to be one of the following: A. change in the labor contract, B. plan sponsors' distressed business conditions, C. unbearable hike in contribution rate, and D. the combination of two plans.

affects the total present value of retirement benefits stipulated in the labor contract.

Another notable development has occurred in a few cases where even the benefits of pensioners are decreased. This reduction is possible provided that two-thirds of pensioners agree, and pension plans reimburse present value of benefits in lump sum if any of pensioners request them to do so.

3.2.2. Introduction of cash balance plans

Recently, an increasing number of benefit adjustments have taken the form of traditional defined benefit plans converted into cash balance plans. As in the US, with cash balance plans, the balance of benefits in each participant's account increases every year by the sum of service credits and interest credits, the latter of which equals the account balance at the end of the previous year multiplied by the base interest rate. Plan participants receive the balance of that cash value at the time of job termination or as annuities upon retirement.

According to a survey by a research institute affiliated to the Ministry of Health, Labor and Welfare, cash balance plans are attracting interest on par with defined contribution plans. The reason is that cash balance plans help plan sponsors to share interest rate risks with plan participants and pensioners.

In cash balance plans, the benefit formula can be designed to counteract the effect of interest rate changes on the amount of pension benefit obligations. Both the base rate used for the calculation of interest credits and the discount rate used for accounting purposes increase (decrease) as the market interest rate increases (decreases). An increase (decrease) in the base rate accelerates (decelerates) the growth of benefit amount, while an increase (decrease) in the discount rate lowers (raises) the amount of benefit obligation for accounting purposes. As a result, in the financial statements of plan sponsors, the effect of interest rate changes on the amount of benefit obligations is offset by the change in interest credits in the opposite direction. In cash balance plans, benefit obligations have a shorter duration and are less sensitive to interest rate movements than benefit obligations of traditional defined benefit plans.

In Japan, this adjustment mechanism can be applied even to the period of annuity payments. Depending on changes in interest rates, a pension plan can adjust the base rate by which the cash value is converted into annuities. The amount of annuities decreases if interest rates decline.

Plan sponsor can also apply this method to the calculation of annuities in traditional defined benefit plans. In this case, the traditional formula, which is usually based on the final salary, is applicable when the total cash value at the time of retirement is determined. Afterwards, the amount of annuities for pensioners is adjusted in accordance with changes in the interest rate.

All of these changes in benefit design enable plan sponsors to share interest rate risks with plan participants, especially the downside risk of interest rates. The adjustment mechanism applicable to annuitants is similar to that in variable annuities.

3.2.3. Introduction of defined contribution plans

The third adjustment in benefit design is the introduction of defined contribution plans. In September 2001, a new law allowed the establishment of defined contribution plans.

Again we find a feature that alleviates the financial burden of plan sponsors. New defined contribution plans can assume liabilities as well as accumulated assets from defined benefit plans. Plan sponsors can be construed to have paid up accrued pension liabilities in EPFs and TQPPs by transferring the same amount of plan assets to defined contribution plans and distributing them to each participant's account. After that rollover, plan sponsors are freed from the investment risks of asset management and from accounting liabilities as well as volatilities in value.

As seen in Table 8, out of 278 defined contribution plans existing in February 2003, 140 plans (50.7%) have been introduced for the purpose of rollover mentioned above. In particular, among large companies with employees over 300 that number is 64.3%.

In spite of this feature, as of the end of March 2003, 18 months after the Defined Contribution Law went into effect, only 361 companies with 325,000 participants have adopted DC pension plans. One reason for the low adoption rate is that the maximum annual contribution is only 436,000 yen if an employer has no other tax qualified defined benefit plans, and 218,000yen if an employer has any type of tax qualified defined benefit plan. Another reason is that participants cannot withdraw any money from their accounts until the age of 60. Liquidity is thus constrained compared not only with severance payments but also with defined benefit plans in which participants can receive at least a portion of benefits in lump sum.

<Please put in Table 8 here. >

3.3. Plan termination

3.3.1. Complete termination

If plan sponsors expect little improvement in financial performance either through sophisticated asset management methods by adjustment of benefit design, they have no choice but to abandon pension plans altogether. The number of pension plan terminations is increasing (Table 1). Many plan sponsors say that they can no longer endure volatility in their benefit obligations and contributions. Plan termination is one of the surest ways to escape from these risks.

Usually at the time of plan termination, plan assets are distributed to participants after the deduction of the amount necessary to pay benefits to current pensioners. While the total amount of retirement benefits in the labor contract does not change, the distribution at the time of plan termination is taken into account in deciding the amount of benefits to be paid in the future. Usually, the labor contract is amended so that plan sponsors disburse the remainder of retirement benefits to employees when they leave their jobs in the future.

3.3.2. Put-back of the contracted-out portion

Not as drastic as complete termination, but much larger in number is the partial

termination of plans by reverting the contracted-out portion of EPFs. The background for this is the increasing disadvantage for plan sponsors that maintain the contracted-out portion of EPFs. One reason is that the interest rate for calculating the rebate premium received from the government was set at 5.5 percent per annum, which has been much higher than interest rates prevailing in the market.

In addition, under the new accounting standards, the contracted-out portion has been included in sponsors' liabilities. The discount rate used in evaluating these liabilities is based on the current market rate, which is far below 5.5 percent. Thus liabilities recorded in financial statements are 20% to 50% larger than actuarial liabilities.

As the disadvantages of the contracted-out portion increase, plan sponsors have come to think that because of the quasi-public nature of EPFs, the inflexible rules for the design, administration and management of EPFs are cumbersome. They also think that operating costs are burdensome, including those for the computation of premiums and benefits.

Citing the foregoing reasons, an increasing number of EPF sponsors have voiced their desire to escape from these burdens of contracting-out. In answer to these demands, the new Defined Benefit Corporate Pension Plan Law which came into effect in 2002 allows the reversion of the contracted-out portion. After reverting the contracted-out portion, EPFs can be changed into one of two types of defined benefit plans under the Defined Benefit Corporate Pension Plan Law: contract-type and fund-type.

Reversion relieves the employer of the foregoing burdens. It also enables plan sponsors to record one-time profits on the income statement. This is possible because the reduced amount of benefit obligations for accounting purposes, discounted by current market rate, is larger than the amount of assets that sponsors are required to pay back to the government.⁹

Plan sponsors' interest in this scheme is very high. Within 12 months of the new law's enforcement, out of 1,700 EPFs, 500 including blue chips such as Toyota, Hitachi and NEC, have been allowed to revert the contracted-out portion. In particular, 45% of single-employer and affiliated-employer plans have acquired permission for reversion.

3.4. Effect on labor relationship

Each pension plan functions as a part of the compensation scheme to better manage human resources and improve their morale and productivity. Since plan sponsors have been taking countermeasures to shift a portion of their financial burden to participants, the effect on employee morale is a matter of concern.

From this viewpoint, we wonder why employees would agree with the change in benefit design, in particular the reduction of accrued benefits. This can be partially explained by the fact that plan sponsors do their best to maintain the cash value of pension benefits and the value of severance payment at the time of job termination. Two

⁹ In the case of reversion, assets equal to liabilities for the contracted-out portion must be returned to the government, specifically to the Government Pension Investment Corporation.

other factors can be pointed out.

First, the entire employment and compensation system is currently in the process of restructuring. Many large companies have been trying to reduce the number of employees, although certain conditions must be satisfied to legally lay off employees. Once employees lose their jobs, it is very hard to find a new one, partly because the labor market is relatively illiquid and inflexible. In short, employees facing the “hold-up” problem are forced to make concessions.

Secondly, it is still disputable whether retirement benefits can be construed as deferred wages. It is legal and very common for an employer to reduce benefit amounts when an employee leaves because of her own will or is dismissed because of misconduct or even criminal charges. If employees and employers consider that benefit amounts can change depending on circumstances, then agreeing with a reduction is less hard for them.

Regardless of whether either of these two explanations is appropriate, it is too early to reach any conclusions about the effect of recent pension plan reforms on employees.

4. Changes in government regulations

Accompanying foregoing measures taken by pension plans and their sponsors, government has changed the way it regulates pension plans.

4.1. Regulation prior to 1990s

As stated in Altman (1992), enhancing the equity, adequacy, and security of pensions is the main objective of pension fund regulation. As far as EPFs are concerned, strict rules explained in Section 1.2. have succeeded in maintaining the equity and adequacy of benefits.

Rules for the security of benefits, however, were not complete in both Japanese defined benefit pensions. Generally, arrangements for the security of benefit rights include: (a) vesting of benefit rights, (b) separation of pension assets from employer’s assets, and (c) securing payment by minimum funding rules and plan termination insurance.

It has been mandatory for EPFs to pay pension benefits to participants with 20 years of membership, and to have pension assets managed in separate accounts at trust banks and insurance companies. Otherwise, EPFs and TQPPS have had very few explicit rules for the protection of benefit rights.

We can point out that there was very little need for special arrangements to maintain the security of benefit payments until the end of the 1980s. The rate of return on pension assets was at a comfortable level for plan sponsors, and they did not have to consider the idea of reducing benefits. There were no EPF terminations other than to combine two or more plans. The Termination Insurance Program for EPFs started in 1989, but no applications have been made.

4.2. Changes in regulation in 1990s

4.2.1. Deregulation of asset management

Conditions favorable to plan sponsors took a turn for the worse after the bubble peaked in 1990. One multi-employer EPF in the spinning industry shut down in 1994. Business conditions continued to decline especially in the old, well-established industries, and the rate of return on pension assets declined to hover at a very low level.

At first, countermeasures taken by pension plans were mostly in the area of asset management. Deregulation processes for asset management rules from the late 1980s supported these movements. These processes were completed in December 1997 for asset allocation and in April 1999 for investment managers. In their place, the prudent person rule requiring duty of care and loyalty explicitly came into effect through ministerial guidance.¹⁰ One of the specific requirements of that rule was the formulation of an Investment Policy Statement.

As a result, the asset allocation of pension funds changed and investment advisory firms deprived trust banks and insurance companies of a substantial portion of their asset management businesses

4.2.2. Changes in funding rules

It was gradually recognized, however, that changes in asset management practices alone cannot solve the financial difficulties of defined benefit plans. In 1997, the rules for funding started to change. At this time, the deregulation of investment rules was completed.

As a first step, EPFs and TQPPs were allowed to determine the actuarial discount rate at their discretion. The government only implied a range for the discount rate every year based upon the average yield of 10-year government bonds issued in the previous 5 years. Also, the minimum period for amortization of unfunded liabilities was shortened from 7 years to 3 years. These changes enabled plan sponsors to accelerate the amortization of unfunded liabilities.

At the same time, the minimum funding requirement for termination liabilities was first introduced to EPFs. In accordance with that rule, if the value of accumulated assets is less than 105% of termination liabilities of the contracted-out portion or 90% of termination liabilities of total benefits, EPFs must set forth a recovery plan incorporating contribution increases to achieve those funding ratios within 7 years. Clearly, the objective of these changes was to accelerate funding and protect benefit rights.

Notwithstanding, the government took a contradictory measure in 1997. For the first time, it explicitly allowed the reduction of benefits under certain conditions: (a) agreement by labor and management, (b) consent by two-thirds of participants, and (c) the existence of hardship in the employer's business conditions.

At that time, because of large unfunded liabilities and increasing contribution amounts, plan sponsors were gradually becoming interested in giving up pension plans. If the government had only set a funding requirement that was difficult for many plans to

¹⁰ In addition to supporting pension plans investment activities, included in the objective of these deregulation measures was the development of the Tokyo market by the so-called Big-Bang initiatives of the government.

achieve, the number of plan terminations would have increased. It can be deduced that the government was trying to strike a balance between measures to require sufficient funding and measures to help plan sponsors continue pension plans.

4.2.3. Further relaxation

After 1997, however, conditions did not improve. The economy did not experience a strong recovery, and the stock market downturn continued after a short-lived boom in 1999 and 2000. New accounting rules revealed the widening shortage in funding.

Under these circumstances, the government could not help but take a measure to alleviate the financial burden of plan sponsors. In 1998 pension funds were allowed to suspend the contribution hike if assets at the end of March 2006 were expected to exceed 105% of minimum liabilities for the contracted-out portion.

A further downturn in the stock market from 2001 compelled the government to take several additional measures to loosen minimum funding rules. For example, EPFs need not implement a (surplus) recovery plan if the funding shortage is within the range stipulated by the government.

In cases where EPFs are required to formulate a recovery plan, they are allowed to suspend implementation for two years. After the two-year suspension, it is possible for EPFs to take ten years instead of seven years for completion. This prolongation is applicable to EPFs that seek to recover funding levels either by reducing benefits or lowering the actuarial discount rate. Also, they can raise the contribution rate gradually until five years from the beginning of a recovery plan, when the rate is supposed to reach the final level.

4.2.4. Introduction of new types of pension plans

The introduction of defined contribution plans, cash balance plans, as well as defined benefit plans without the contracted-out portion can be regarded as measures to help pension plans adjust their benefit design.

The Defined Contribution Plan Law came into effect in 2001. The Defined Benefit Corporate Pension Plan Law which came into force April 2002 has made it possible for EPFs to adopt the benefit formula of cash balance plans. It has also allowed EPFs to revert the contracted-out portion and transform themselves into either contract-type or fund-type defined benefit plans. Hence, we now have three types of defined benefit pensions (Chart 3). Existing TQPPs must convert to one of the three types within a 10-year transition period.

<Please put in Chart 3 here. >

The introduction of new types of pensions is aimed to support the continuation of pension plans. Plan sponsors can transfer investment risks to plan participants in defined contribution plans. In cash balance plans, they can share risks with plan participants. The government has even tried to help them deal with risks in managing assets and liabilities accrued in the past. For example, the government made it a rule that accrued liabilities in old defined benefit plans could be satisfied by removing the same amount of assets of old

plans to these new types of plans.

4.3. Possible policy debate

All in all, the government has taken lenient policies in funding requirements because it has prioritized helping pension plans to overcome and survive these financial difficulties. Another policy option would have been to require the fast recovery of funding levels and force termination in case pension plans cannot recover the funding. In reality, very few underfunded plans were forced to dissolve, while the minimum funding rule continued to be relaxed. As of March 2001, out of all 1,800 EPFs, more than half were underfunded (accumulated assets were short of 0.9 times the amount necessary to pay benefits upon plan termination, and 1.3 times the minimum actuarial liabilities for the contracted-out portion).

These policies may be criticized from two points. First, in the context of prudence regulation, such forbearance policies to troubled financial institutions are said to bring about several inefficiencies. One is the moral hazard of management revealed in excessive risk taking activities. This occurs if there is a termination (deposit) insurance scheme, as was experienced in the Savings and Loan crisis in the 1980s.

We must note a few reservations before using this analogy. In Japan, with regard to termination insurance for EPFs, if inappropriate management is the cause of underfunding or the funding ratio is below 50%, the insurer can reduce the amount of insurance money to be payable to the insured. Further, examining 21 applications for insurance payment in past, the insurer rejected 10 and did not admit any payment. Also, the insurance premium is set in proportion to the amount of the funding shortage. The duty of prudence as a part of fiduciary responsibilities, which the law requires for plan management, could be effective in preventing imprudent investment. These factors may somewhat prevent excessive risk-taking by pension plan management.

Secondly, underfunding destabilizes the participant's life after retirement because it increases the possibility of benefit reduction. However, if underfunded plans are forced to terminate, no one can replenish that shortage. Participants could not have received the full amount of accrued benefits, since termination insurance can cover only part of them. Under these circumstances, preemptive intervention into pension funds is not necessarily more advantageous for participants than forbearance.

Considering the above, policies that accommodate underfunded pension plans might be as worthwhile as policies to force them to terminate. If the government had pursued a tighter policy from the 1990s, it is doubtful whether it would have been more successful. A macroeconomic shock could have made it almost impossible for any plan to meet the strict requirements of the government. Forbearance policies might be selected as a second-best option.

5. Summary and implications for the future

For over a decade in Japan, retirement benefit plans have been struggling in a severe environment. More than a decade after the problem emerged, pension plans in other developed countries seem to have been sliding down the same slope. Without a crystal ball, we cannot foretell to what extent pensions in other countries will follow the fate of pensions in Japan. Here we summarize the experiences of pension plans, plan sponsors, and the government, and explain the future tasks they must encounter. The implications, whether good or bad, for pension plan management and regulatory policies in other countries can be extracted.

5.1. Experience and challenges of plan sponsors

The phenomenon that plan sponsors had to cope with was that of very low ex-ante probabilities. Placing ourselves in the shoes of plan sponsors back in 1990 or 1997 we could not have expected the situation where the rate of return of the stock market would be -4.9% for 13 years or -6.6% for 6 years. For example, even if we had had a crystal ball and could forecast risk-free rate accurately, the probability of such low rates of return was less than 5.0% , as long as we use a historical equity risk premium. Only when we had made a modest assumption of a 2.0% equity risk premium, the probabilities of the actual return from 1997 to 2002 would have risen to 11% level¹¹ (Table 9).

<Please put in Table 9 here. >

Such low probabilities or low risk premium were mostly outside the consideration of plans and plan sponsors. Furthermore, low rate of return has been brought about by structural change in the economy. The stock market performance and plan sponsors' business conditions deteriorated at the same time. This might be especially true in the deflationary economy. In the equation derived from the simple Dividend Discount Model,

$$S_t = D_t / (R_f + P - G),$$

stock prices are determined by the dividend at the starting point D_t , risk-free rate R_f , risk premium P , and the expected growth rate of the dividend, G . Usually in an economic downturn, the decline in G is somewhat offset by the decline in risk-free rate R_f . In a deflationary environment, however, this relation becomes less binding. Dividend and earnings growth rates in the foreseeable future fall into negative territory, while the risk-free rate cannot fall below zero. In this case, the decline in G , which reflects deflationary business conditions, influences stock prices more directly. The correlation between stock prices and business conditions rises.

Facing this dual burden, plan sponsors have been trying to reduce the amount of benefits and to transfer a portion of their liabilities accruing from the past to plan participants or employees. Even so, ex-post reduction has the possibility of damaging employees' morale, and the reputation of and confidence in plan sponsors.

¹¹ By the calculation based on log-normal return distribution, probabilities of actual stock return are 0.9% and 5.7% , based on a historical risk premium and 5.6% and 14.5% assuming a 2.0% of risk premium.

For the future, plan sponsors can meet the challenges of dealing with this type of shock in advance. One way is to shift all or part of the investment risks to plan participants through the introduction of defined contribution plans and cash balance plans.

Plan sponsors have also been trying to share business and macroeconomic risks with plan participants. The obvious arrangement for that purpose is to introduce a merit-based wage scale with emphasis on the performance of each employee as well as that of the company's overall business. This performance-based wage scale can be reflected easily in the retirement benefit formula in cash balance plans and defined contribution plans, because in these plans, the amount of service credit (cash balance plans) and contribution (DC plans) is usually a fixed percentage of wages.

Another measure Japanese plan sponsors have yet to try is risk diversification through capital markets. Business performance is more correlated to the domestic than global economy even though business activities of some markets are increasingly globalized. Decreasing the exposure to domestic stock markets and increasing the exposure to foreign markets could lessen the impact of macroeconomic shocks. With that objective, plan sponsors have to obtain plan managers with professionalism and motivate them with proper incentives.

5.2. Government experience

The Japanese government first tried to ensure and protect benefit rights by strengthening solvency (funding) regulations and the termination insurance scheme. However, the macroeconomic shock was so widespread that it was almost impossible for pension plans to abide by tightened rules. On the other hand, rigid funding rules would surely have led to the dissolution of problematic plans.

The government turned around and accommodated plan sponsors' demands for more lax regulation on funding in defined benefit plans and benefit design. It clarified conditions for the reduction of accrued benefits including those of pensioners.

It is easy to criticize in hindsight that pension benefits would have been better protected if assets equal to termination liabilities had been upheld by the minimum funding rule since the 1990s. As we have explained in 4.3., though, the evaluation of such forbearance policies are yet to be justified. In the Netherlands, the regulatory authority's tough stance is now arousing a big controversy.

In the future, as a matter of course, ex-post reduction of pension amounts is undesirable for employees. A strict minimum funding rule should take effect in defined benefit plans, although it may be difficult to thoroughly implement this rule unless we can completely depart from macroeconomic shocks. The lax funding requirement is still applied to new types of defined benefit plans introduced by the Defined Benefit Pension Plan Law, since most of them are succeeding underfunded EPFs and TQPPs. It might be necessary to make employers and employees thoroughly negotiate over the feasibility of the benefit amount if there is any underfunding of pension liabilities and/or bankruptcy or other trouble with the employer's business directly.

Also, it is essential to allow for benefit design wherein a plan sponsor can share investment and/or business risks with plan participants. While cash balance plans and defined contribution plans have been allowed, the government can be ready to admit the idea of other new benefit designs. This may include cases where pension plan benefits are linked to plan sponsors' profitability.

Finally, the challenge that I believe has relevance to other governments is related to accounting principles. In theory, changes in accounting rules should have nothing to do with the economic value of plan sponsors and their pension plans. If the market is completely efficient and valuation in the market corresponds with plan sponsors' intrinsic economic value, changes in accounting rules should have no effect on market valuation.

In reality, market participants were not omniscient and the market was not very efficient. Funding shortages already existed before the change in accounting rules. Both the management and investors of plan sponsors, however, paid little attention until the change in accounting rules in 2001. Once rules were changed, management came to worry about investors' reaction to the amount of unfunded liabilities and periodic benefit costs. Minimizing both the amount and volatility of these has become one of the largest motives for management to abandon traditional defined benefit plans and adopt new types of plans.

Other countries where new accounting rules have been introduced such as the U.K. are experiencing the same situation wherein changes in accounting rules have seriously affected pension fund management. Regulatory authorities of pension funds should pay attention to plan sponsors' disclosure and to the reaction of the market and investors. They may well give thought to the idea of integrating actuarial accounting for two purposes: one is to determine the amount of company contribution to a plan, and the other is to disclose information to market participants. They also may wish to consider the possibility of allowing pension funds greater discretion in funding decisions so that pension funds can change the amount of contribution flexibly in correspondence to the plan sponsors' business conditions

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Table 1: Conditions of Employees' Pension Funds and Tax Qualified Pension Plans

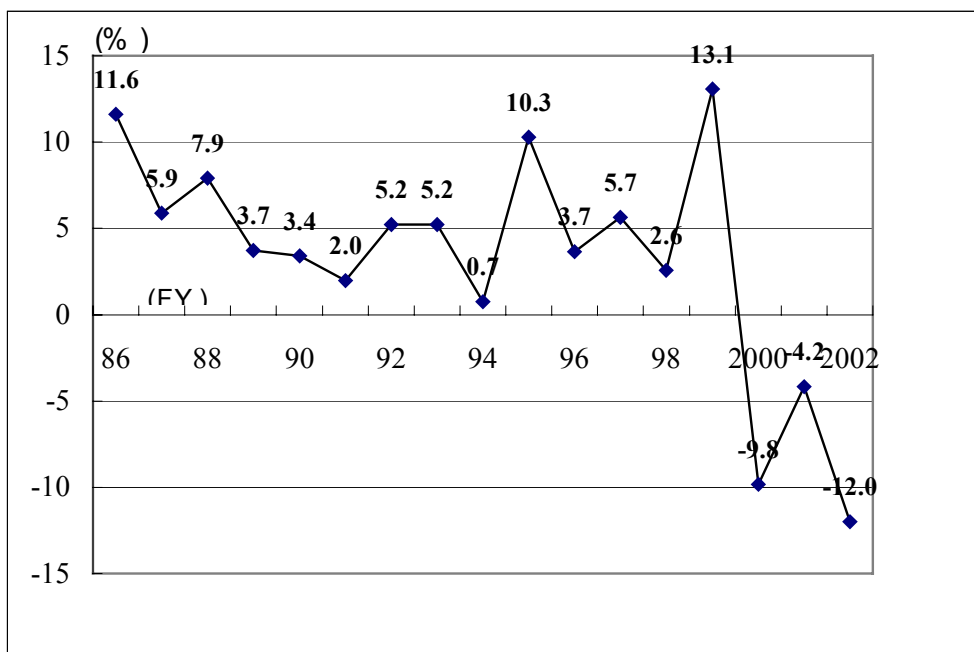
As of end of fiscal year

Year	Employees' Pension Fund					Tax Qualified Pension Plans		
	Number of plans	Number of active participants (million)	Assets under management (billion yen)	Number of termination	Number of benefit reductions	Number of plans	Number of active participant (million)	Assets under management (billion yen)
92	1,735	11.6	32,184	0	0	92,082	10.4	15,029
93	1,804	11.9	35,416	0	0	92,467	10.6	16,071
94	1,842	12.1	38,426	1	0	92,355	10.8	16,957
95	1,878	12.1	41,775	1	0	91,465	10.8	17,801
96	1,883	12.1	44,959	7	0	90,239	10.6	18,466
97	1,874	12.3	48,695	14	7	88,312	10.4	19,156
98	1,858	12.0	51,281	18	16	85,047	10.3	19,988
99	1,835	11.7	55,486	16	52	81,605	10.0	21,137
00	1,814	11.4	58,017	29	177	77,555	9.7	22,358
01	1,737	10.9	58,297	59	114	73,913	9.2	22,719
02	1,656	10.5	57,200	73	NA	66,752	8.6	21,447

Table 2: Rate of Return by Asset Class (annual average, %)

Fiscal year	Money	Domestic bonds	Domestic stocks	Foreign bonds	Foreign stocks
1986 to 1989	4.3	3.1	17.7	5.9	13.3
1990 to 2002	2.0	6.0	-4.9	6.7	7.3
1997 to 2002	0.1	3.3	-6.6	7.2	2.6
Reference index					
	Call money	NOMURA -BPI	TOPIX	Citi Group (Salomon Smith Barney) World ex Japan Gvt Bond	MSCI World ex Japan

Chart 1 : Return on Assets Managed by EPFs



Note: Fiscal 2002 is estimated.

Table 3: Change in Return on Equity in Large Corporations
(5-year average, %)

Fiscal year	All non-financial industries	Manufacturing	Non-manufacturing
1982-86	7.4	7.5	7.3
1987-91	6.6	6.7	6.5
1992-96	2.9	3.5	2.2
1997-2001	0.7	1.4	-0.5

Note: For companies with paid-in capital over 1 billion yen.

Source: Ministry of Finance, *Annual Statistics on Corporations*.

Table 4 : Change in Labor Distribution Rate (%)

Fiscal year	All corporations			Corps. with paid-in-capital over ¥1 billion		
	All non-financial industries	Manufacturing	Non-manufacturing	All non-financial industries	Manufacturing	Non-manufacturing
1960-69	59.3	57.1	61.7	47.4	46.8	48.6
1970-79	67.5	67.8	67.2	56.0	60.0	50.1
1980-89	70.6	71.0	70.3	57.7	62.8	51.2
1990-99	72.5	74.3	71.5	62.5	68.6	56.6
2000	73.2	73.7	73.0	60.7	65.7	55.9
2001	75.1	77.7	73.9	63.9	72.6	56.4

Source: Ministry of Finance, *Annual Statistics on Corporations*.

Table 5 Share of Employees Age 50 and Over in Companies with 1,000+ Employees (%)

year	Age 50~59 and tenure of 30+ years		
	A	B	B/A
College graduates (all industries)			
1977	4.3	0.8	17.5
1987	8.5	2.4	28.5
1997	11.7	5.1	43.1
2001	14.7	6.4	43.4
High school grauate production workers (manufacturing)			
1977	1.6	0.3	17.8
1987	7.0	2.5	36.3
1997	13.1	8.3	63.4
2001	18.2	13.5	74.3

Source: Ministry of Health, Labor and Welfare, *Basic Survey of Wage Structure*.

Table 6: Funding Conditions Disclosed in Plan Sponsors' Financial Statements

	Total employees (1,000)	Projected benefit obligation A	Plan assets B	Net shortage of funds C = A - B	Accrued benefit costs recognized on balance sheet D	Unrecognized portion of projected benefit obligation E = A - B - D	Periodic benefit costs F
Fiscal year ending March 2001 Total N = 1,024 (trillion yen) per employee, million yen	8,761	73.9 (8.4)	39.9 (4.6)	34.0 (3.9)	23.2 (2.6)	10.8 (1.2)	10.7 (1.2)
Fiscal year ending March 2002 Total N = 1,024 (trillion yen) per employee, million yen	8,618	78.2 (9.1)	39.2 (4.6)	38.9 (4.5)	24.6 (2.9)	14.4 (1.7)	6.2 (1.2)
Year-on-year increase (%)	-1.6%	5.7%	-1.8%	14.6%	6.1%	32.8%	-42.2%
	C / Shareholders' equity	C / Recurring profit	F / Shareholders' equity	F / Recurring profit			
Fiscal year ending March 2001	23.5%	179.4%	7.4%	56.6%			
Fiscal year ending March 2002	27.1%	332.3%	4.3%	52.9%			

Note : Numbers include severance benefits.

Table 7 : Asset Allocation of EPF (%)

	1990	92	94	96	97	98	99	2000	2001
Stocks	18.4	14.9	16.5	26.0	37.1	44.8	54.6	52.2	51.6
Domestic	13.0	10.0	11.1	15.7	21.5	28.3	36.5	34.0	32.0
Foreign	5.4	4.9	5.4	10.3	15.6	16.6	18.0	18.1	19.6
Yen straight bonds	21.7	24.1	21.2	25.0	24.1	22.2	21.5	21.3	21.3
Yen convertible bonds	3.3	4.5	4.7	5.2	3.5	2.0	1.6	1.3	0.7
Foreign bonds	5.2	4.8	3.8	5.4	6.1	8.5	7.4	10.3	10.2
Insurance companies general account	36.9	40.3	42.2	30.6	24.4	17.7	11.1	11.3	12.1
Real estate	0.6	0.4	0.3	0.3	0.1	0.1	0	0	0
Money	3.2	2.2	2.8	2.4	2.2	2.5	2.5	2.2	2.7
Other	10.8	8.9	8.4	5.1	2.5	2.2	1.3	1.4	1.4

As of end of fiscal year.

Source: Federation of Employees' Pension Funds

Chart 2: Change in Share of Pension Assets Under Management by Industry

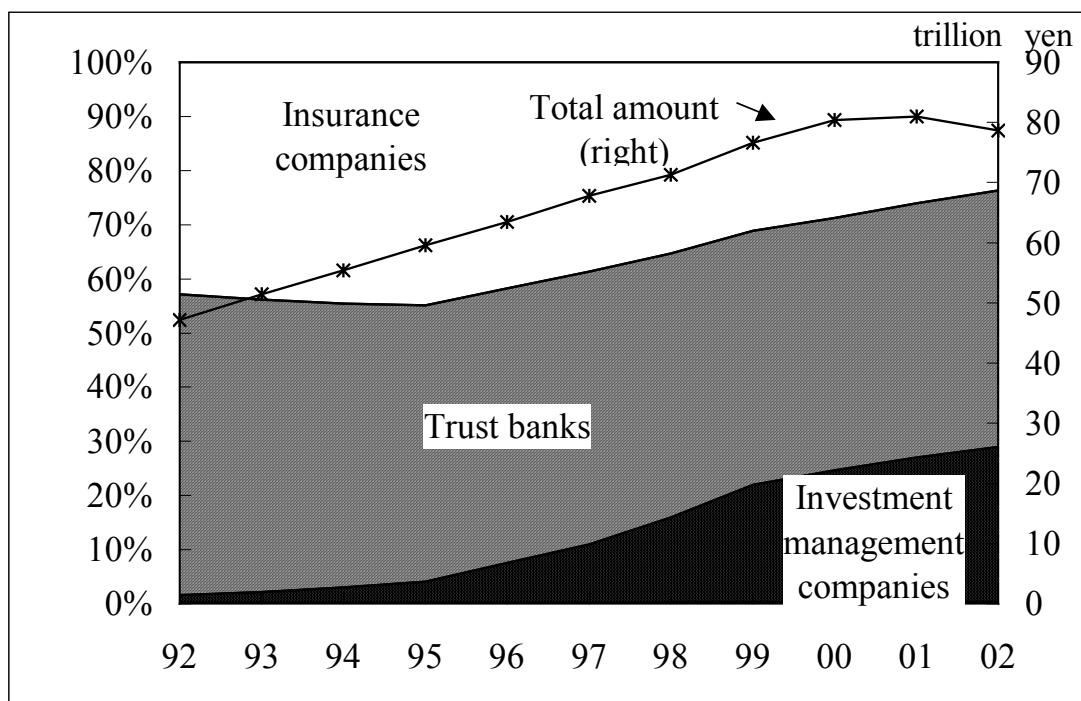


Table 8 Breakdown of Company-Type DC Plans Introduced by February 2003

	Total		With 300+ participants		With under 300 participants	
Number of plans	276	(100.0)	11	(100.0)	164	(100.0)
Rollover from other DB						
No rollover	136	(49.3)	40	(35.7)	96	(58.5)
Rolled over from	140	(50.7) <100.0>	72	(64.3) <100.0>	68	(41.5) <100.0>
TQPP	83	<59.3>	38	<52.8>	45	<66.2>
Book reserve lump-sum	29	<20.7>	17	<23.6>	12	<17.6>
Combination of above two	21	<15.0>	10	<13.9>	11	<16.2>
EPF	5	<3.6>	5	<6.9>	0	<0.0>
Combination of TQPP and EPF	1	<0.7>	1	<1.4>	0	<0.0>
Combination of three	1	<0.7>	1	<1.4>	0	<0.0>

Note: Parentheses denote percentage points.

Chart 3: Change in Corporate Pension Structure Under the New Defined Benefit Pension Law

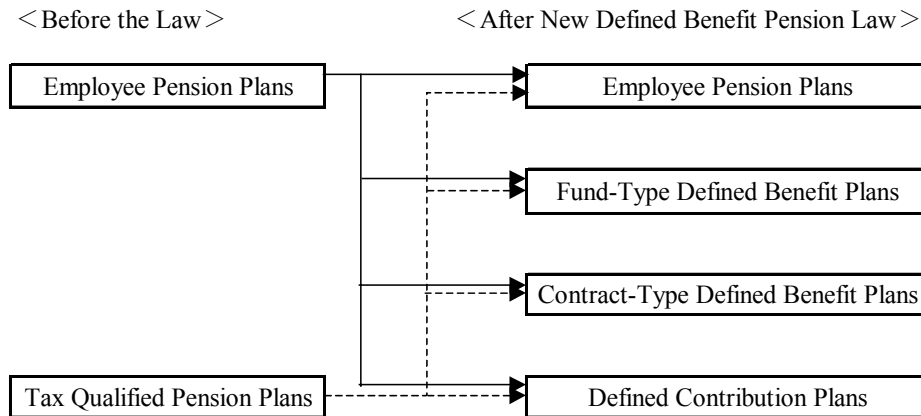


Table 9: Ex-Ante Probabilities of Our Experience in Stock Market After 1990

Assumption (A)			Experienced Return (B)		Probabilities of (B) or worse under Assumption (A) in Normal
Base	Mean	Standard Deviation	Nominal average return	years	
Risk Free Rate (90 to 02) 1.95% +Risk Premium 5.44% (1953 to 2002)	7.39%	17.70% (average 1953 to 2002)	-4.86%	1990 to 2002	0.63%
Risk Free Rate (97 to 02) 0.15% +Risk Premium 5.44% (1953 to 2002)	5.59%	17.70% (average 1953 to 2002)	-6.57%	1997 to 2002	4.62%
Risk Free Rate (90 to 02) 1.95% +Risk Premium 2.00%	3.95%	17.70% (average 1953 to 2002)	-4.86%	1990 to 2002	3.64%
Risk Free Rate (97 to 02) 0.15% +Risk Premium 2.00%	2.15%	17.70% (average 1953 to 2002)	-6.57%	1997 to 2002	11.38%