

Pensions, Benefits and Social Security
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**Trends in post-employment benefits
in Japan and considering the way
for more sustainable schemes**

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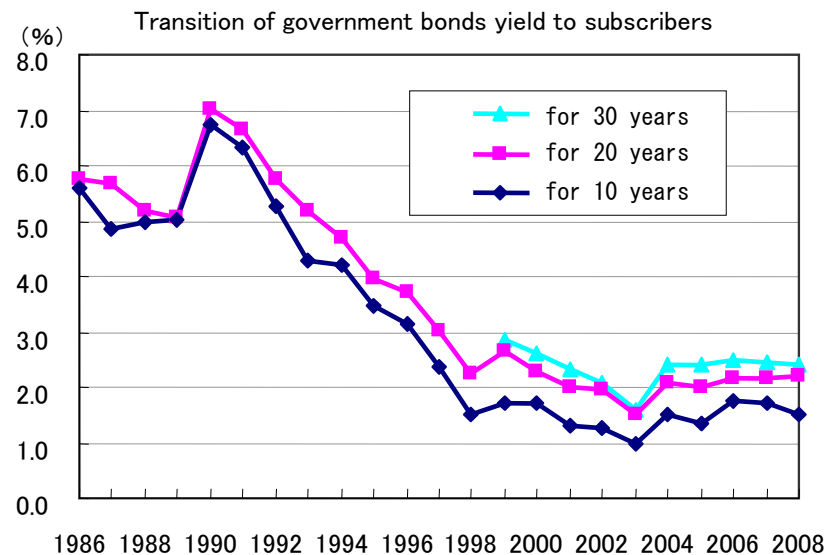
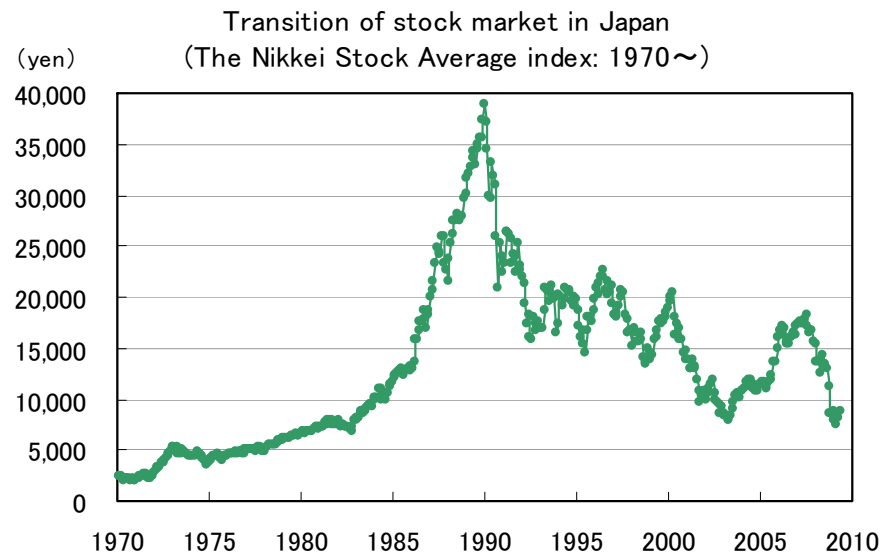
Akihiro Nagakura

Kenji Kusakabe



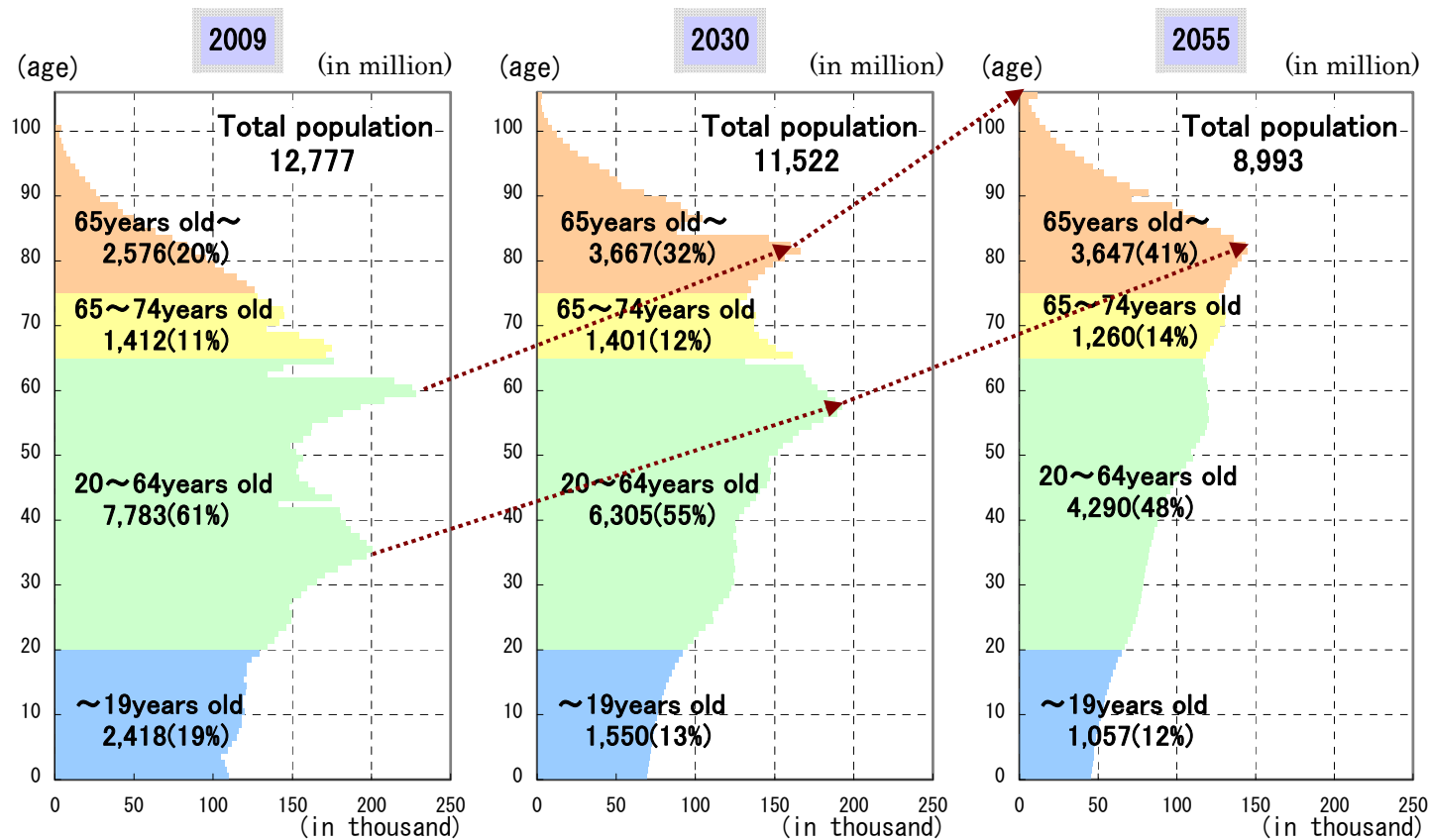
1. Background of economic environment in Japan and change in population balance

- Deep recession caused by the collapse of the bubble economy continued intermittently since early 1990's, and Japan has been suffering from prolonged historically low interest rate.
- Economic recovery started from the year 2003, but it did not last long.
- Recently, Japanese financial market has been confused due to the economic crisis or the sudden deterioration in stock market triggered from subprime mortgage loan problem and the bankruptcy of Lehman Brothers in US.



1. Background of economic environment in Japan and change in population balance

- Japan has one of the longest longevity and aging speed of Japanese society is faster than any other countries in the world.
- As the total fertility rate has greatly fallen below 2.0 (About 1.3), the ratio of elderly people more than 65 years of age to the working people will increase to over 40% in 2005.



【Source】 <http://www.stat.go.jp/>

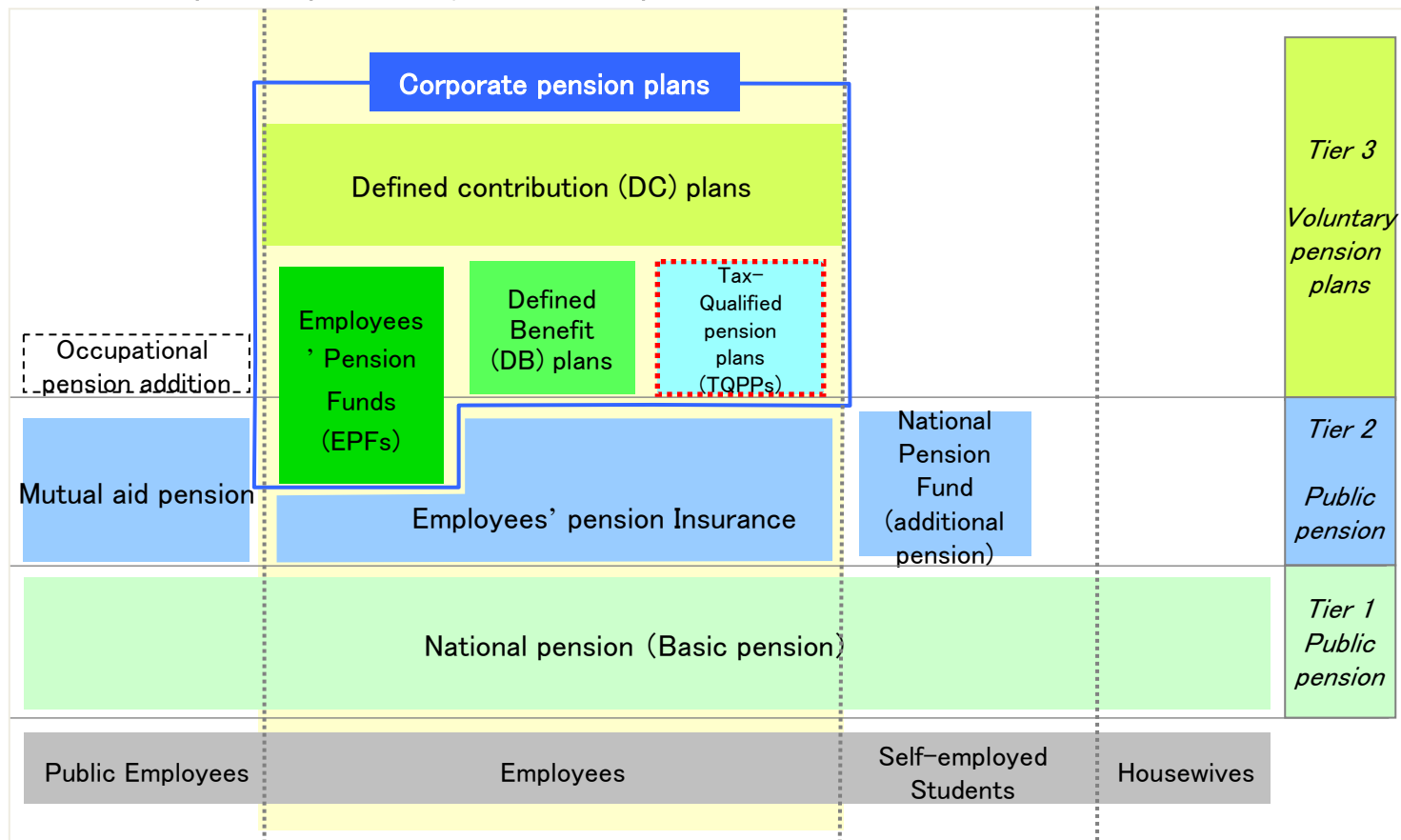
【Source】 <http://www.ipss.go.jp/>

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2. Outline of pension system in Japan

- Japanese public and private pension system consist of 3 tier benefit systems.
- First tier (flat benefit to all Japanese) and second tier (earnings-related benefit to salaried employees) are both public pension systems. Third tier is private corporate pension plans.
- Among private corporate pension plans, TQPPs is going to lose their tax merits as of March 31st 2012.

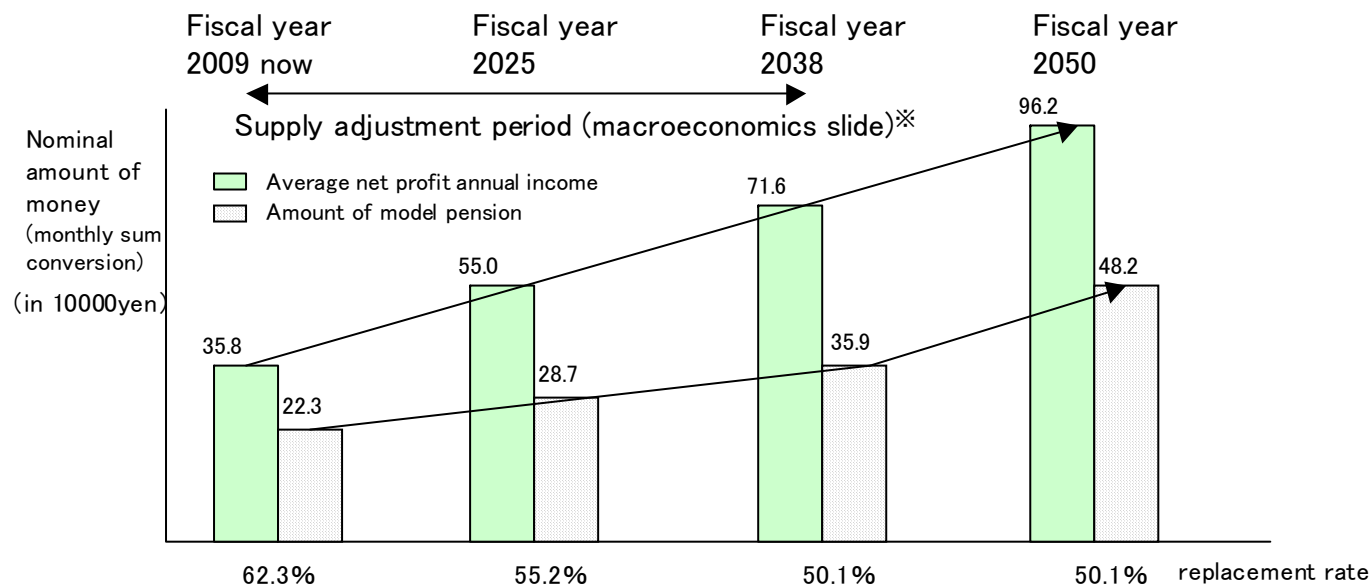
Public and private pension systems in Japan



2. Outline of pension system in Japan

- For public pension benefits, funding scheme, "Pay as you go" system is basically adopted; a premium that an active participants pay is used for the present retirees pension benefits.
- To adapt to the problems currently occurred in economic environment, declining birthrate and aging society, "macroeconomic slide", slimming down of the public pension benefit is in execution.

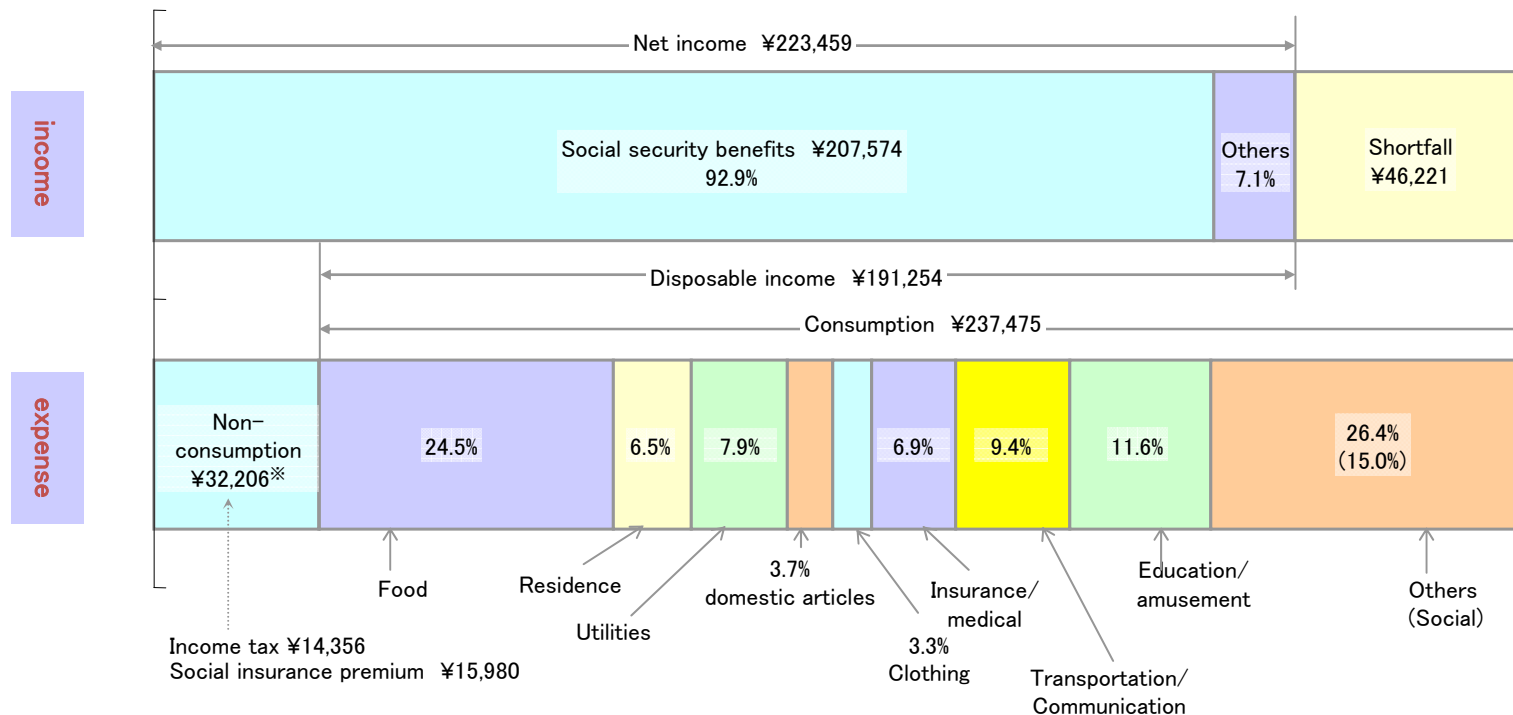
"macroeconomic slide", slimming down of the public pension benefit



※ The adjustment period of the earnings-related component is expected to end in 2019.

3. Income and expense at old age

- Generally, many elderly Japanese earn their living by only social security pension benefit.
- However, average income at old age is insufficient for their expenditure about 46,000 yen.
- To make up this shortfall, they might be forced to withdraw their nest eggs.

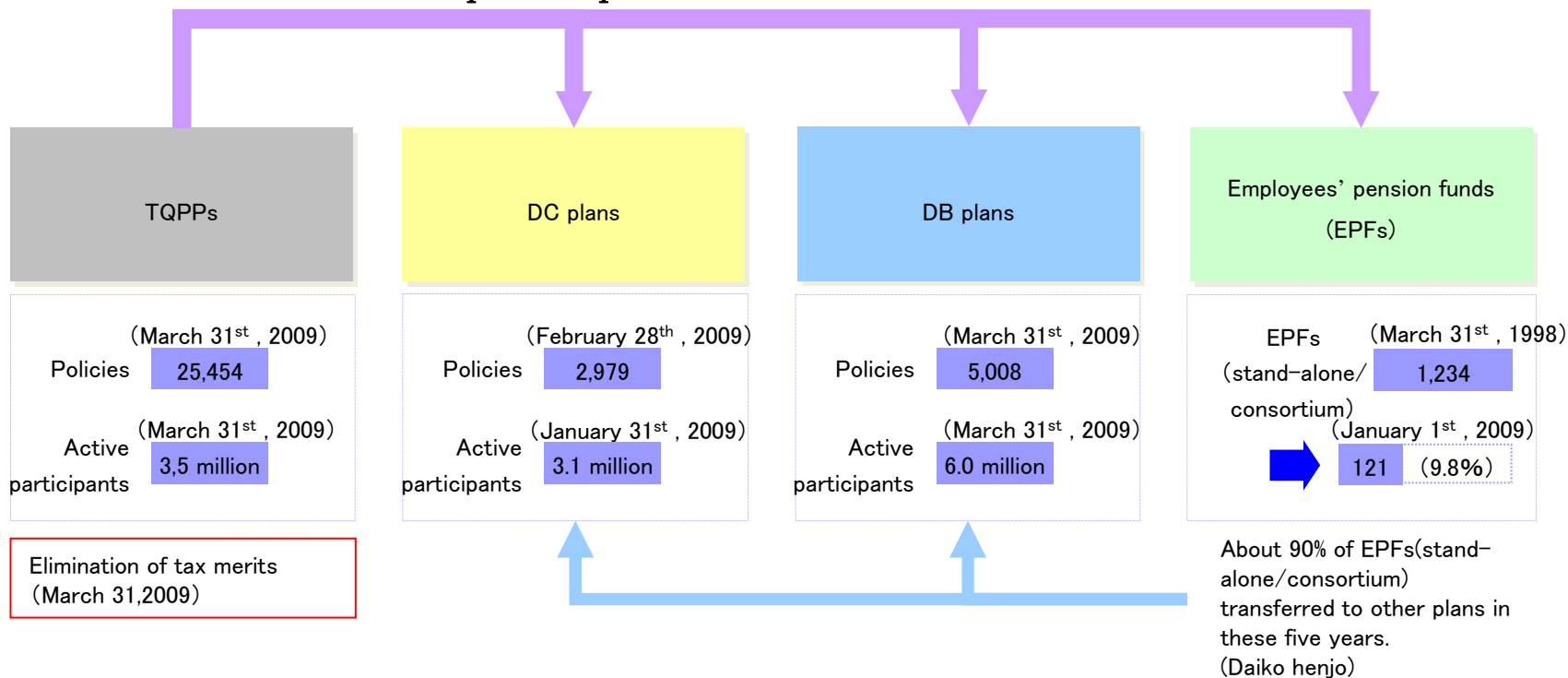


【source】 “Family Budget Survey in 2006” Statistics Bureau, Ministry of Internal Affairs, Posts and Telecommunications

4. Corporate pension benefits in Japan

- In Japan, corporate pension benefits are composed of TQPPs, EPFs and DB plans as defined benefit pension plan type, and DC plans as defined contribution pension plan type.
- TQPPs are scheduled to be abolished at the end of March in 2012 for strengthening protection for vested pension benefits.
- Currently, plansponsors are shifting to DB plans from TQPPs, often coincidentally reviewing and amending its post-employment benefits.

Transition in number between pension plans

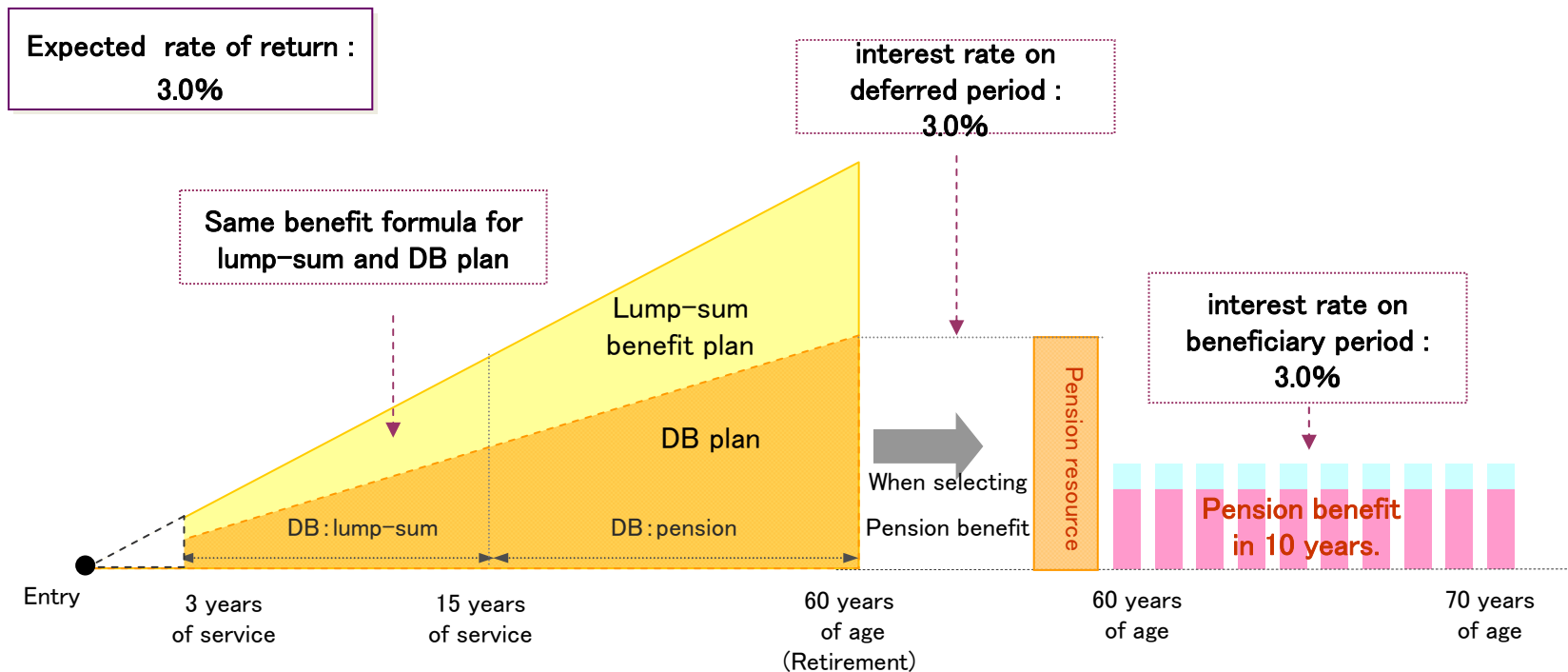


【source】 Created by Mizuho based on the data, “Status of Corporate Pensions as of April 1, 2009”, Pension Fund Association

5. Features of post-employment benefits in Japan

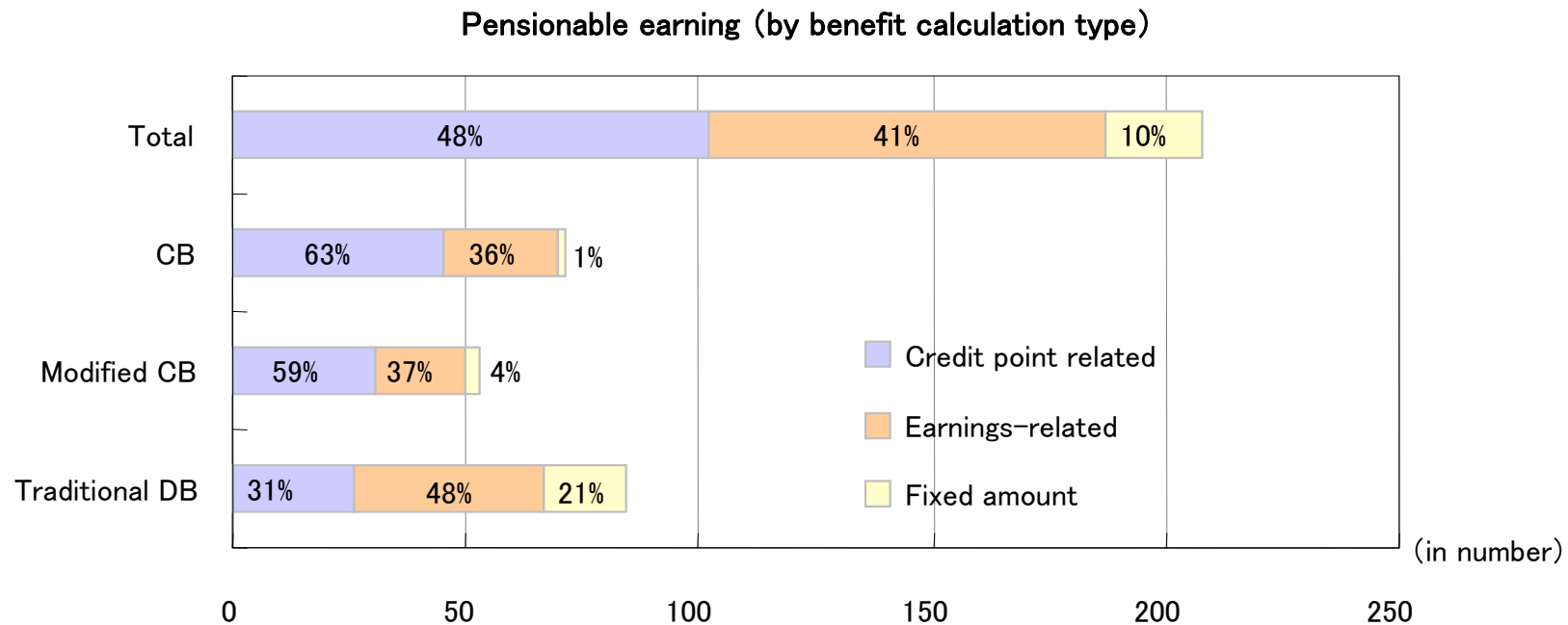
- In Japan, generally post-employment benefits are combined benefit type consisting of mainly lump-sum reserve and of pension plan. That is to say, lump-sum reserve is an origin of all the post-employment benefits.
- As for pension benefit of DB plan, the amount of it is usually calculated by converting the amount of original lump-sum benefit applying some interest rate (ie,3%) from the employee's severance to the pension eligibility age and also all of beneficiary period.

An example of whole images of post-employment benefits in Japan



6. Trends on designs of DB plans

- The result shows that various benefit calculation types are adopted for DB plans. Concretely, plansponsors are adopting CB plans, modified-CB plans, and traditional DB plans at almost the same rate (about 1/3).
- Of all the plan,the most are the credit point related, earnings-related, and fixed-amount plan to the least.
- Because the mechanism of benefit credit point related plan is similar to the notional individual account of CB plans and modified CB plans in the point that the benefit is formed by accumulations of the amount awarded in each period, the adoption of the combined designs of credit point related plan and CB plans (or modified CB plans) has been increasing.

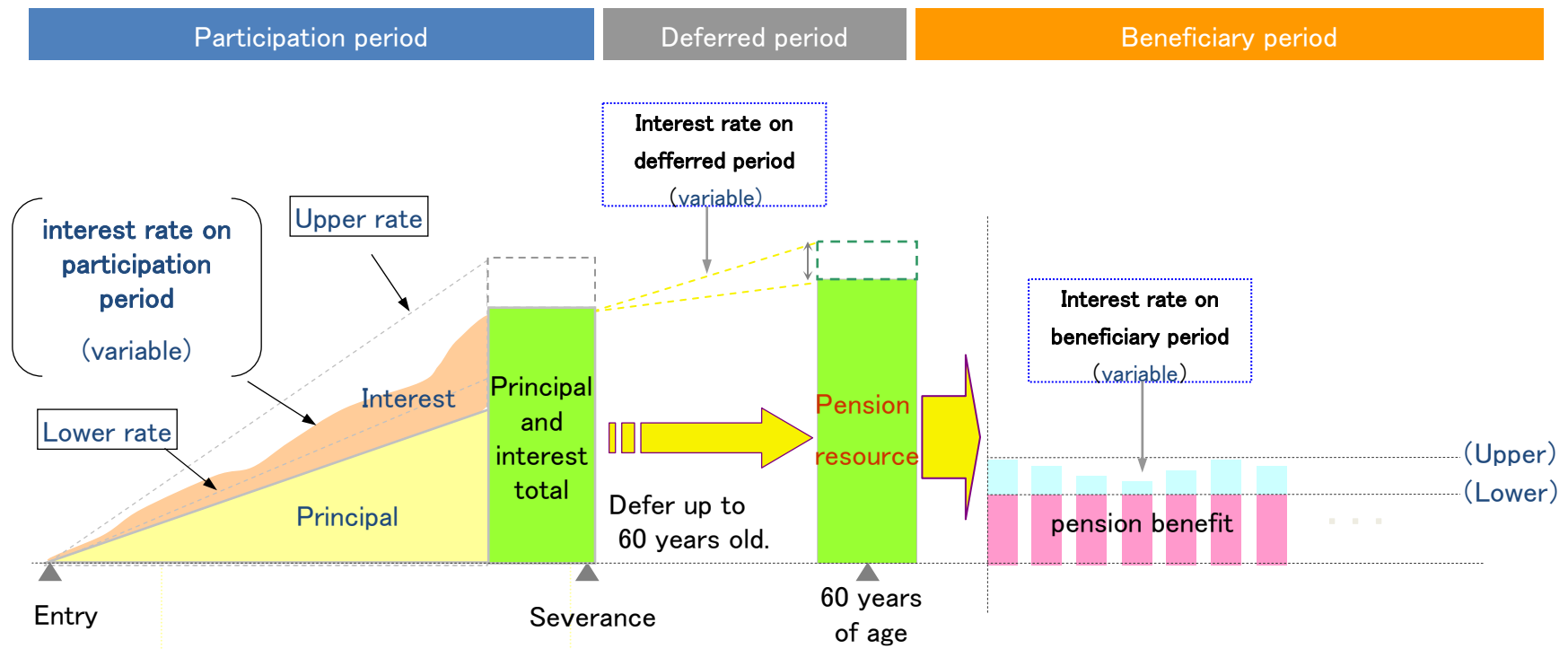


The result of the survey of Mizuho Trust & Banking Co., Ltd

6. Trends on designs of DB plans

- As is well known, CB plans are cash balance pension plans the benefit of which are set as so-called notional individual account.
- CB plans and modified CB plans are both comparatively new benefit type in Japan, because in Japan, the legislation or the amendment of pension law admitting them was enacted few years ago (CB plans in 2002 and modified CB plans in 2003).

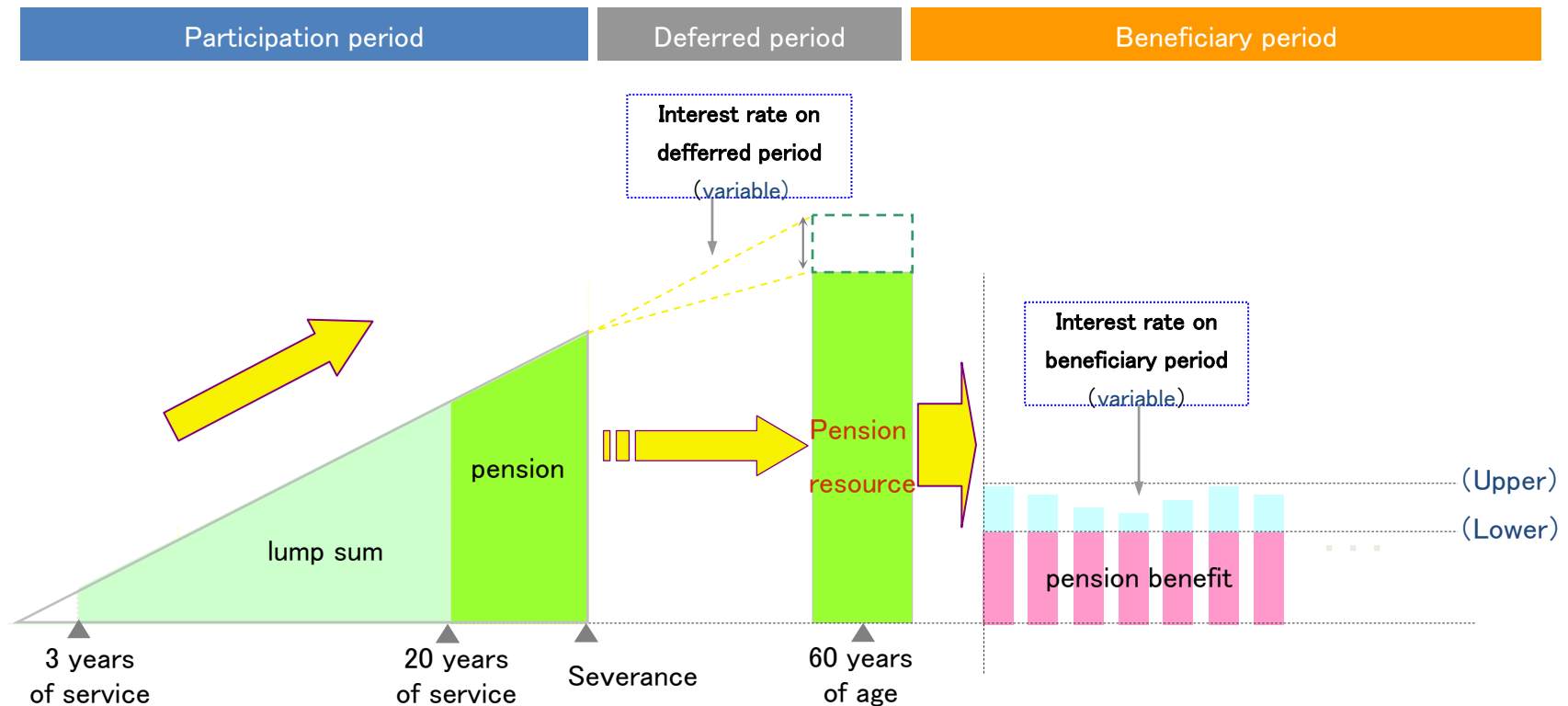
Whole images of benefit formula for CB plans



6. Trends on designs of DB plans

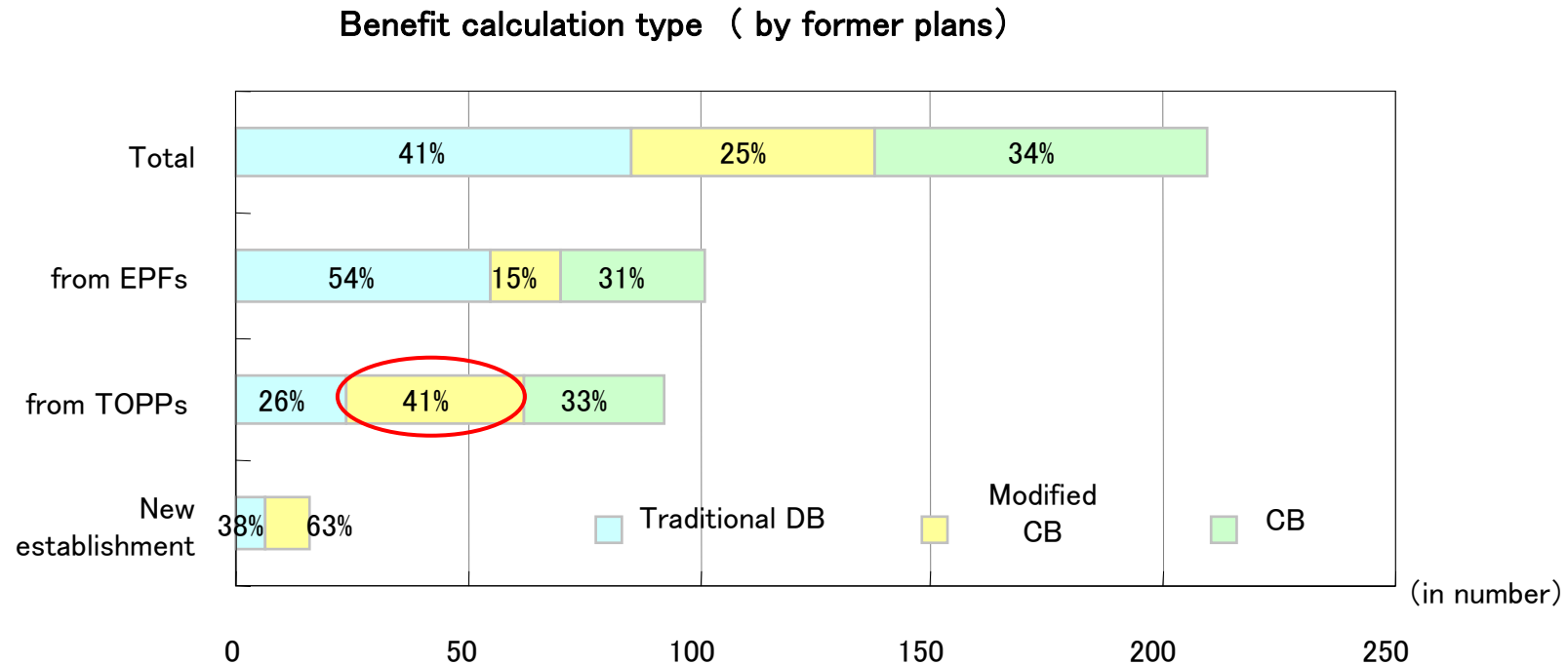
- Modified CB plans are the pension plans the benefit of which are set as the same formula as traditional pension plan during employee's period of service and also as the same formula as CB plans during deferred period and/or beneficiary period in annuity.
- It is much more easy for plansponsors to shift from traditional DB plans to modified CB plans, and to explain the effect of amendment of pension plans to the employee. Recently, the number of modified CB plans has been steadily increasing.

Whole images of benefit formula for modified CB plans



6. Trends on designs of DB plans

- The figure shows the results of trends in plan designs by establishment form.
- Of all the plan, modified CB plans are adopted in 40% or more plans when shifting from TOPPs to DB plans in recent years.



6. Trends on designs of DB plans

- CB plans transferred from EPFs were the most popular plan in the early stage of DB plan.
- However, the number of the plans from TQPPs to DB plans has been increasing in recent years, and modified CB plans have been recently adopted in 40% or more plans. (Especially in FY 2008, the ratio reached more than 50%.)
- Thus, according to the survey results, when transferring to DB plans from TQPPs, employers don't tend to change their basic plan design in the participation period.

Transition in numbers of each benefit calculation types

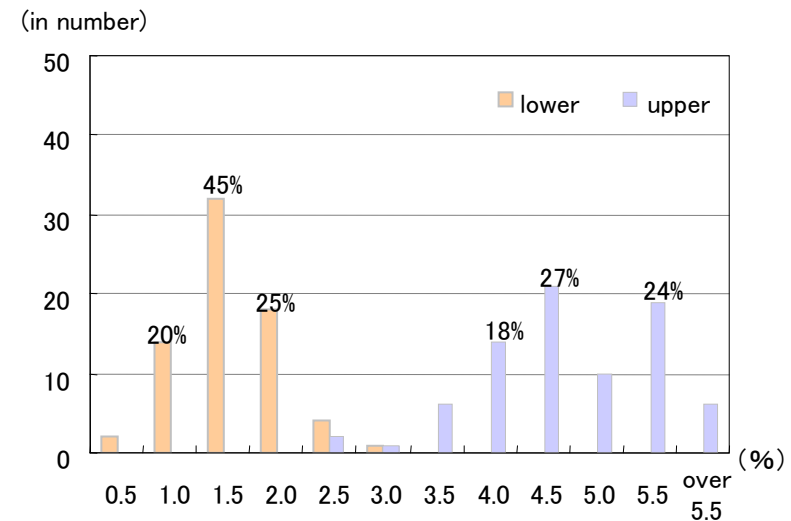
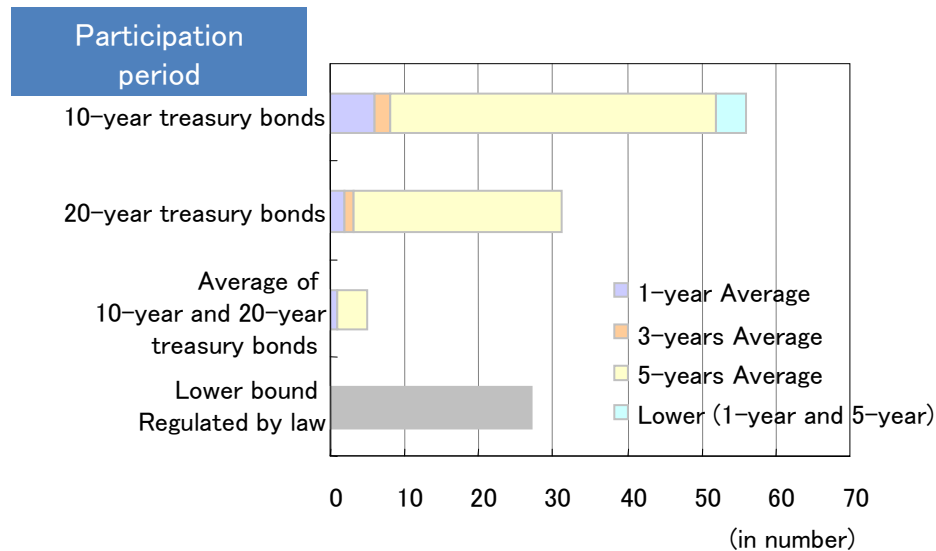
Establishment years	Total				EPFs				TQPPs				New			
	Tradi Tional DB	Modified CB	CB	Total	Tradi Tional DB	Modified CB	CB	Total	Tradi Tional DB	Modified CB	CB	Total	Tradi Tional DB	Modified CB	CB	Total
FY 2003	12	4	14	30	10	4	8	22	1	0	4	5	1	0	2	3
FY 2004	29	12	18	59	26	11	16	53	3	1	1	5	0	0	1	1
FY 2005	16	2	12	30	14	0	5	19	1	2	7	10	1	0	0	1
FY 2006	5	7	7	19	1	0	1	2	4	7	4	15	0	0	2	2
FY 2007	10	10	10	30	1	0	0	1	5	10	8	23	4	0	2	6
FY 2008	13	18	10	41	3	0	1	4	10	18	6	34	0	0	3	3
Total	85	53	71	209	55	15	31	101	24	38	30	92	6	0	10	16

Customer survey of Mizuho Trust & Banking Co., Ltd. (as of April 1st2009)

6. Trends on designs of DB plans

- The figure shows the indices used for participation period of CB plans.
- Most of the plans have been adopting "Average five years of 10-year treasury bond yield to subscribers" for the interest rate of participation period.
- Some plans adopted the indices with lower limit (and often with upper limit) and the major bound pair of the interest rate is set with 1.5% and 4.5% for participation period.

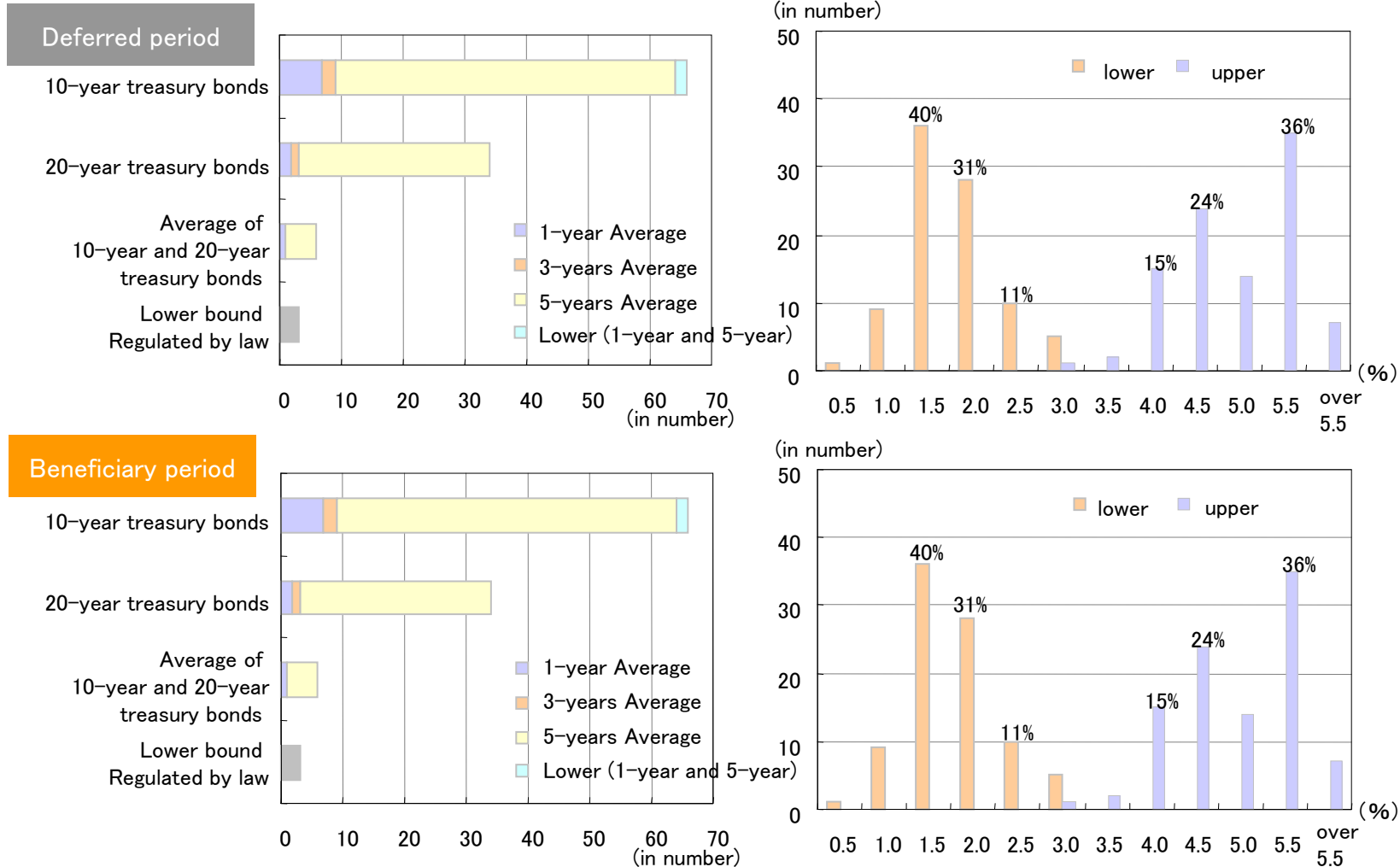
Indices used for participation period of CB plans



6. Trends on designs of DB plans

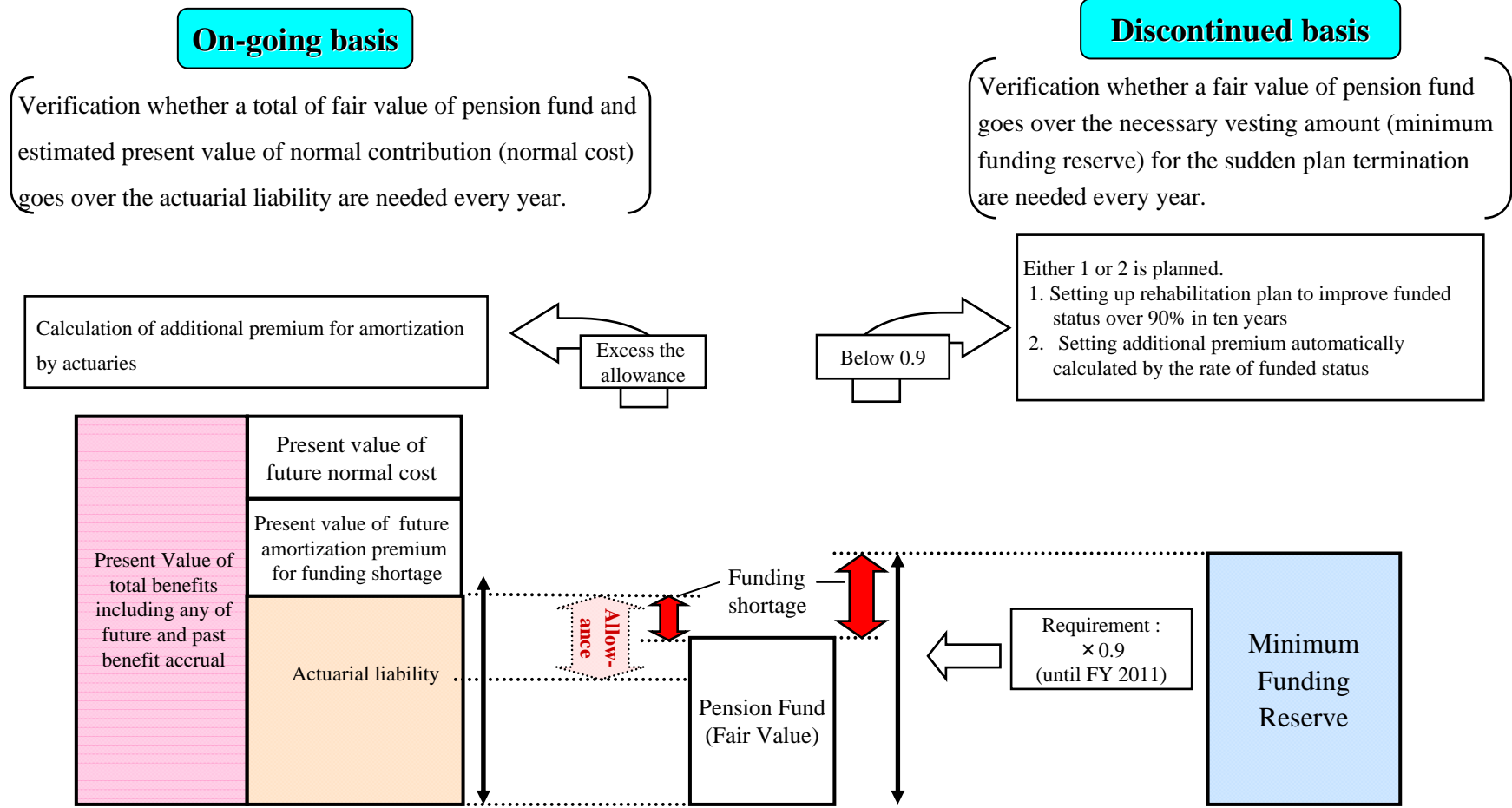
- Many plans are also adopting "Average five years of 10-year treasury bond yield to subscribers" for the interest rate of participation period.
- The major bound pair of the interest rate is set with 1.5% and 4.5% (5.5% for beneficiary period).

Indices used for CB plans and modified CB plans for deferred and beneficiary period



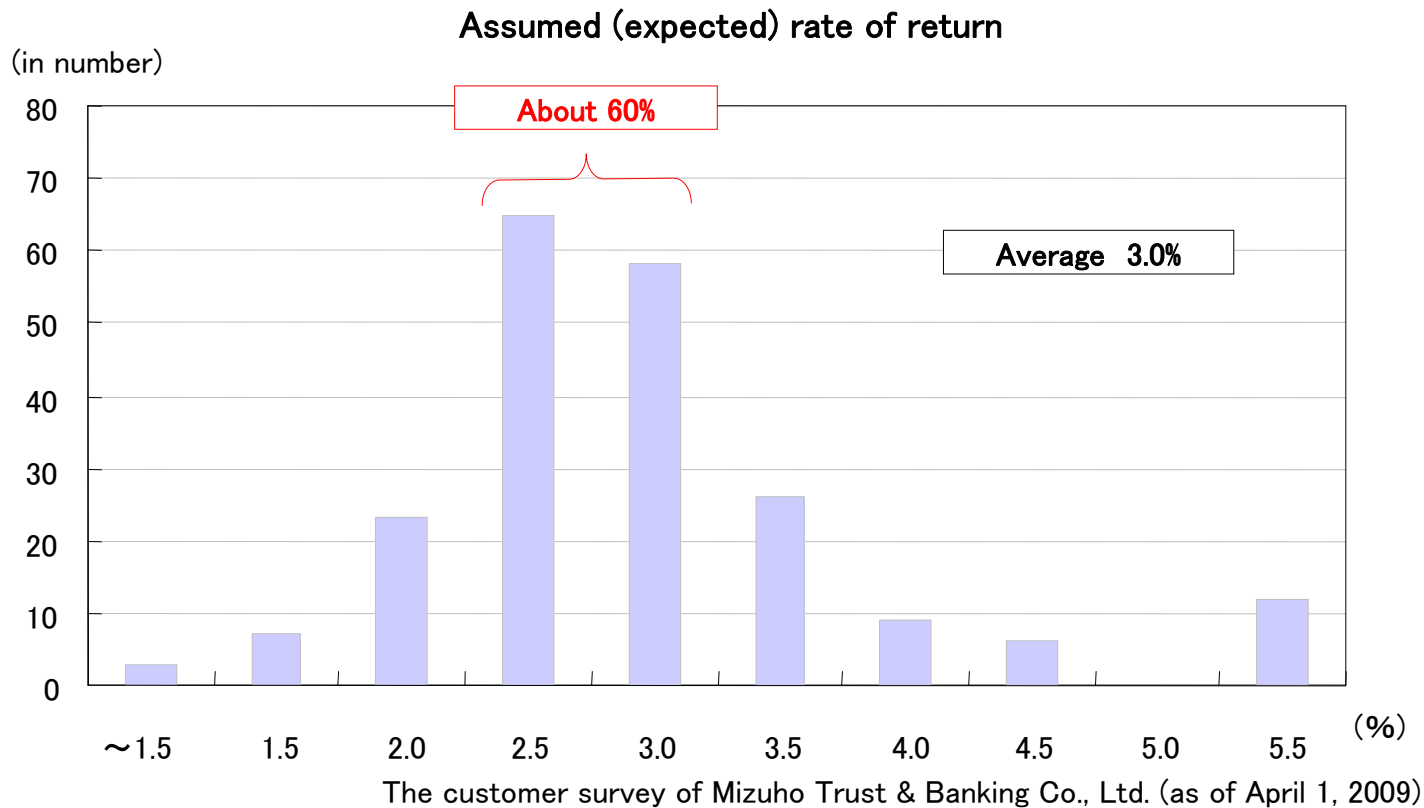
7. Funding rules of DB plans

- The figure shows the basic funding rules in Japan.
- There are two valuation method for funding; "On-going basis" and "Discontinued basis" in Japan
- If the plan's funded status fall below either of funding standard, pension plan needs to check whether the plansponsors have to pay additional premium in the future.



7. Funding rules of DB plans

- Most popular assumed rate of return on pension fund for on going basis funding standard shares about 60% within the range from 2.5% to 3.0%.



7. Funding rules of DB plans

- Future prospects for the performance of managed fund is 3.0% for Mizuho Trust & Banking's low-risk asset portfolio models.
- This rate is consistent for the result of most popular setting of expected rate of return on pension funds especially transferred from TQPPs is within the range from 2.5% to 3.0%.

(Unit:%)

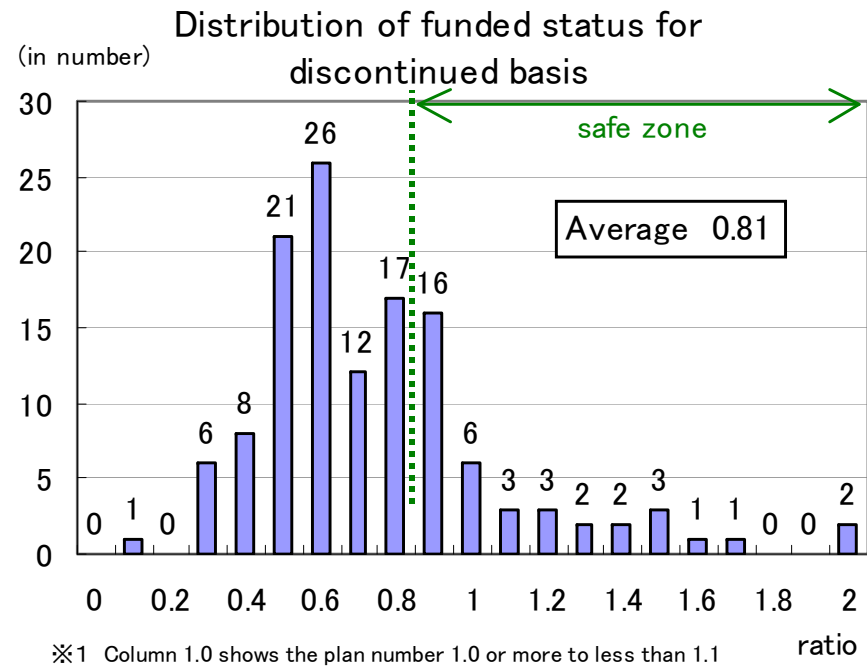
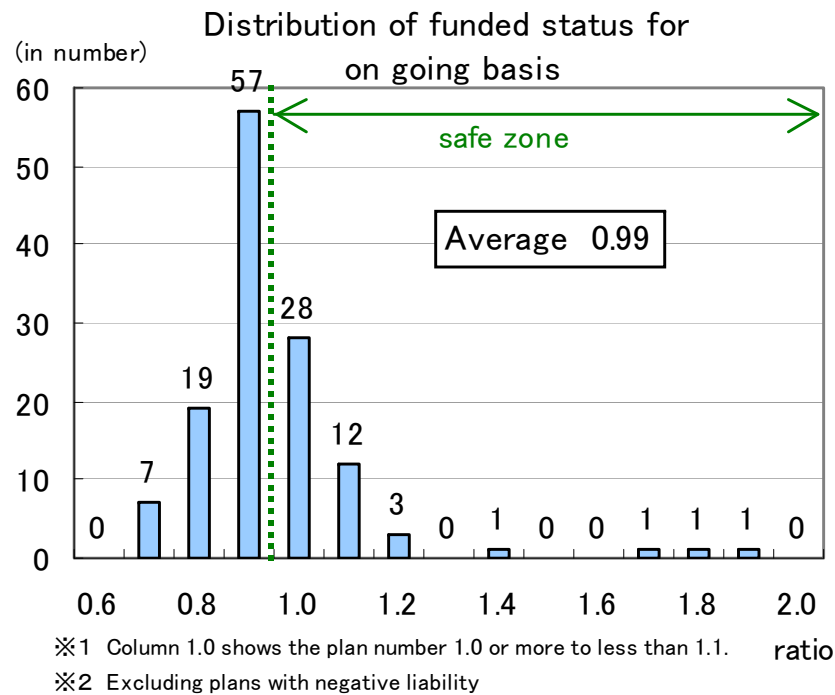
		Stock ratio	Expected return	Risk	Property composition ratio							
					Domestic bonds	Domestic stock	Foreign bonds	Foreign stock	cash	GIC	Hedge fund	others
Mizuho TB's assumption	Middle risk	53	3.7	8.6	34	33	10	20	3	-	-	-
	Semi-middle risk	45	3.4	7.4	42	28	10	17	3	-	-	-
	Low risk	38	3.0	6.3	47	23	10	15	5	-	-	-
	Risk limitation Type 1	30	2.7	5.1	55	19	10	11	5			
	Risk limitation Type 2	20	2.2	3.8	65	13	10	7	5			
DB plans		35	-	-	27	20	13	15	4	13	5	3

※1 using "Mid-term expectation return risk and correlation coefficient model in fiscal year 2009" of Mizuho TB

※2 The property composition ratio "Outline of the corporate pension asset management investigation of asset allocation result in fiscal year 2007" (pension fund association).

7. Funding rules of DB plans

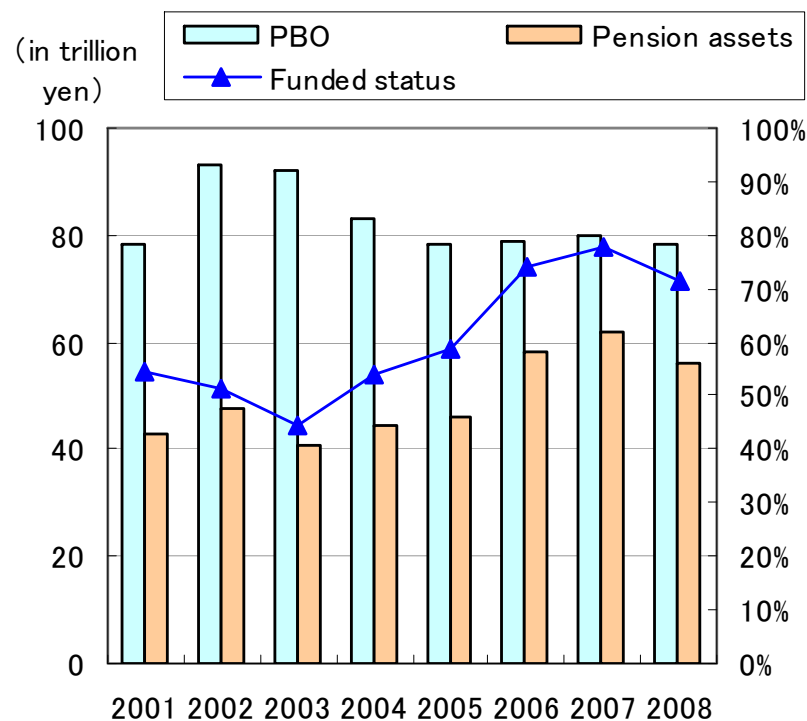
- More than 60% of pension plans(83/130) fall below the 100% standard in FY 2009 valuation. (on-going basis)
- 70% of pension plan (91/130) falls below the 90% standard in FY 2009 valuation. (discontinued basis)



8. Funded status of post employment benefits on accounting

- Average funded status (pension assets/PBO) of Japanese public corporations was about 55% at the time of introduction in FY 2001.
- Some entities are contributing their investment securities on the balance sheet to pension assets though, funded status of pension assets has been still fluctuating between 50% to 70% level. The rest is presented as pension liability on the balance sheet. The reason for this is that internal lump-sum benefit has a presence in post-employment benefits in Japan.

Transition of pension assets and PBO



Average funded status since the first adoption of post employment benefit in FY 2001, it showed a remarkable decrease to about 40% level in 2003 affected by both of the deterioration of stock market 3 years in a row and large increase of total 90 trillion yen of PBO due to the decreasing discount rate.

As for the plansponsors' restructuring, plansponsors made a great effort introducing CB plan, modified CB plan, and/or DC plan. Considering the impact of PBO diminishment, "Daiko henjo", or returning of EPF's substitutional public pension benefit portion to the government prevailed widely. Although recent market turmoil would have grown up to be a troublesome problem, since almost 10 years has passed from the first adoption of accounting standards in post employment benefit in Japan, it could be fair to say that an accounting problem of funding shortage has relatively diminished these days.

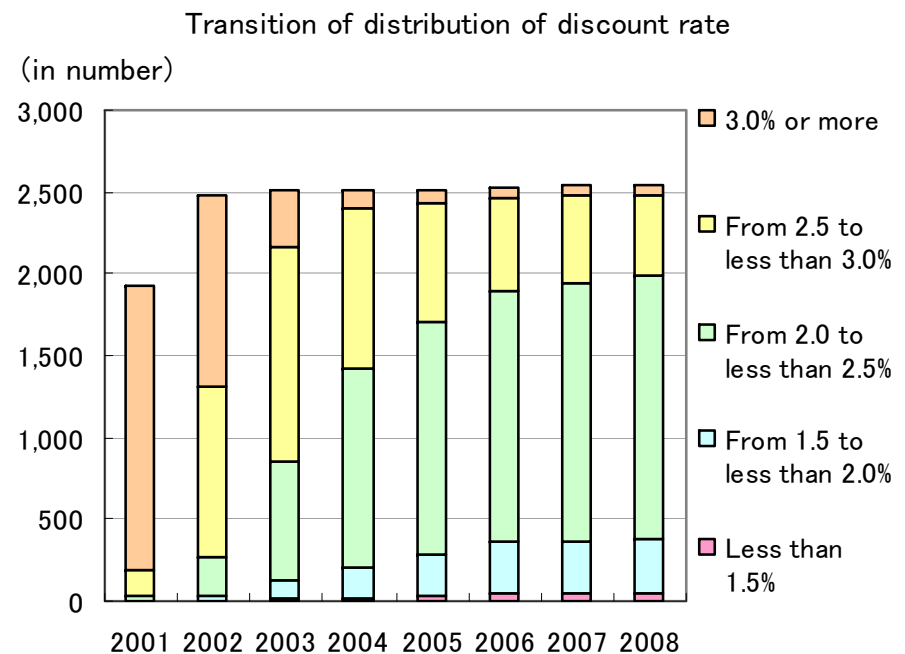
8. Funded status of post employment benefits on accounting

- As for the discount rate, it is lowered from "3.0% or more" in 2001 to average level around 2.3%.
- However, funded status reached over 70% in 2007.
- One reason is that plansponsors conducted restructuring. And the total amount of PBO maintained around 80 trillion yen level, under the continuing diminishment of historically low discount rate.

Transition of average setting of discount rate

	Average discount rate		
	FY 2007	FY 2008	FY 2009
Discount rate	2.3%	2.3%	2.3%
Expectation rate of return	2.6%	2.7%	2.6%

[source] The survey of customer of Mizuho Trust & Banking Co., Ltd.



8. Funded status of post employment benefits on accounting

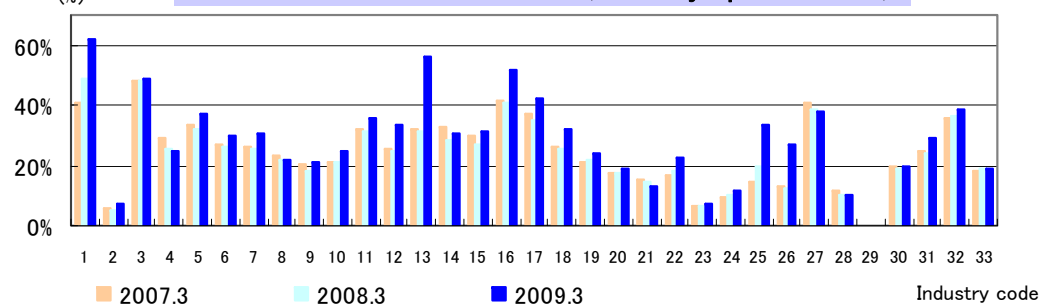
- The ratio of an unrecognized obligation to net assets decreased to less than 5% in FY 2007.
- It could also be fair to say that post-employment benefits in Japan have come to be managed stably under the situation that the mean value of a discount rate and an expected return rate decreases to average 2.3% level respectively.
- However, recent market deterioration showed the ratio's jumping up to 8%, which might have been a serious effect for stockholder's equity of some reporting entities, if the immediate recognition would be executed in the accounting standards.

Transition of various index showing funded status

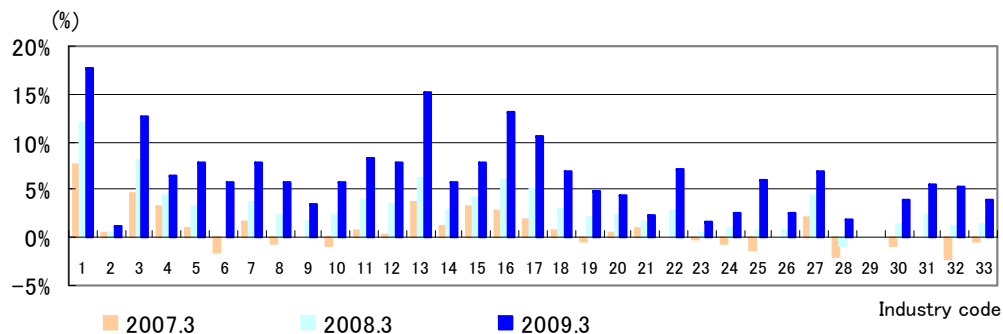
	Average discount rate		
	FY 2007	FY 2008	FY 2009
Unrecognized liability /net assets	2%	4%	8%
PBO /net assets	29%	28%	33%
Pension assets /net assets	19%	17%	17%
Pension assets /PBO	66%	61%	52%

[source] The survey of customer of Mizuho Trust & Banking Co., Ltd.

PBO/net assets distribution (industry specification)



Unrecognition debt total/net assets distribution (industry specification)



8. Funded status of post employment benefits on accounting

- The fact that the average ratio of the portion of lump sum benefit in the entire post employment benefits is around 50% is the main reason for the funding status of accounting between 50% and 70% level.

Proportion of corporate pension benefit in total post-employment benefits (FY 2005) (Unit: %)

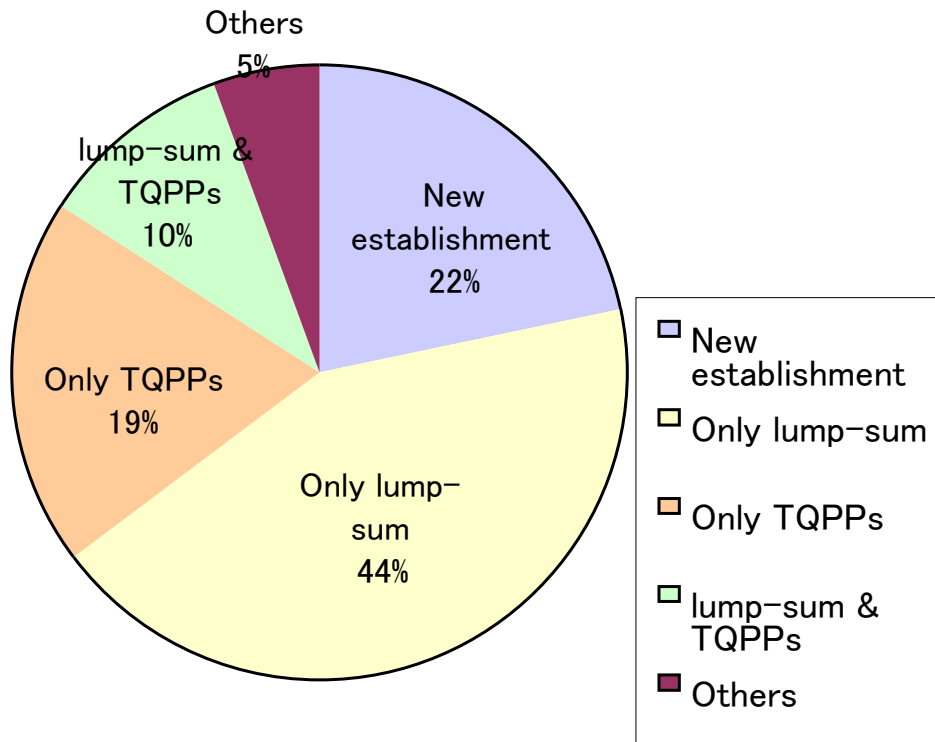
		total	1,000 people or more	From 500 to less than 1,000 people	From 100 to less than 500 people	From 50 to less than 100 people
using together with corporate pension benefit and lump-sum benefit		100.0	100.0	100.0	100.0	100.0
Proportion of corporate pension benefit	1~19%	5.1	4.3	4.6	5.7	4.5
	20~39%	12.5	16.7	16.3	11.9	11.0
	40~59%	17.6	32.3	21.9	15.1	15.6
	60~79%	18.3	21.7	19.1	20.0	13.7
	80~99%	8.8	8.5	13.0	8.5	8.0
	Uncertain	37.7	16.5	25.1	38.9	47.2
Average ratio		51.4				

【source】The National Personnel Authority “Result of private company post-employment benefits investigation” (2006)

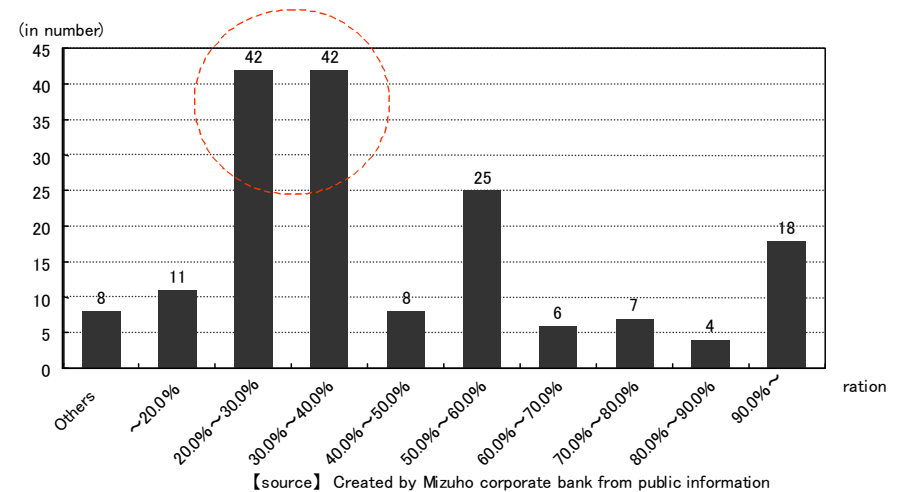
9. DC plan

- The figure shows the former plan type for transition to DC plan and the ratio to DC plan benefit to the total post employment benefit.
- New DC plan establishment shares about 22% and the transition from lump sum and TQPP shares about 73%.
- The ratio of the portion of DC benefit compared with entire post employment benefit is between 20% to 40%.

Transition trends to DC plans



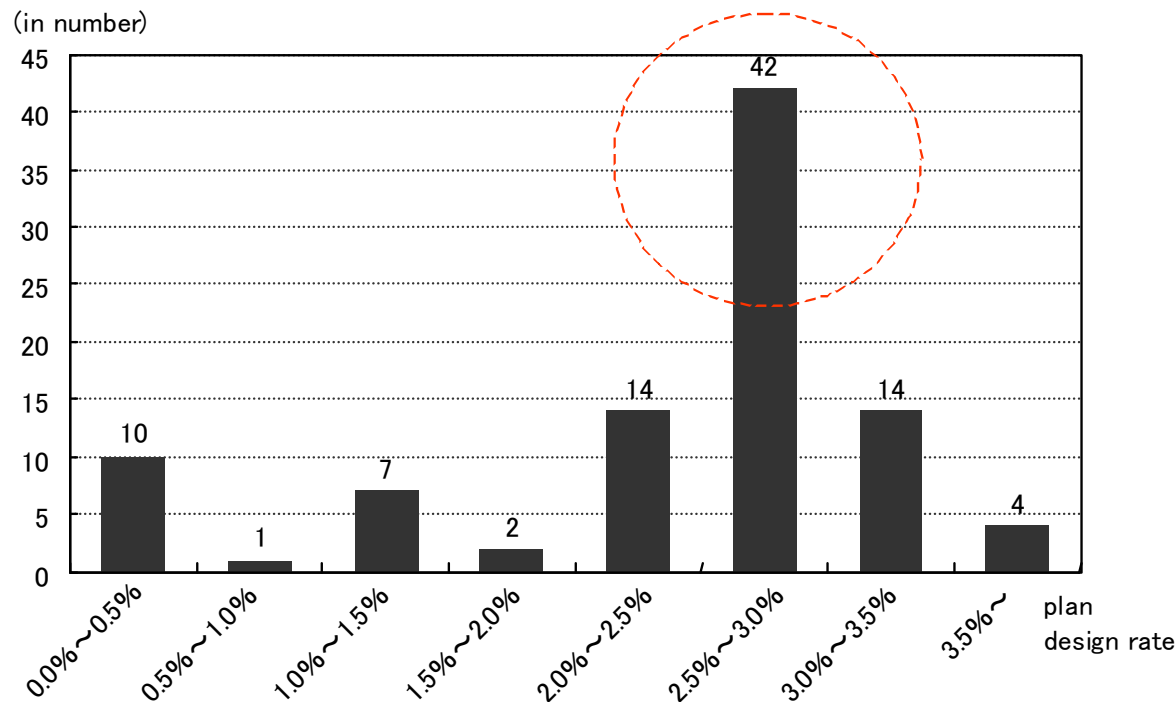
The ratio to DC plan benefit to the total post employment benefit



9. DC plan

- An assumption of an expected rate on investment of each employee, or "plan design rate", plays a critical role for the contribution rate setting.
- When transferring to DC plans, plansponsors usually have to decide the benefit level considering related portion of former DB plan benefit and to set a contribution rate based on its benefit level from the point of view of converting to cash flows
- With regard to the relation between plan design rate setting and contribution rate, the higher the plan design rate, the lower the contribution rate and vice versa.
- Most popular design rate setting is 2.5%~3.0%.

Distribution of plan design rate of DC plan

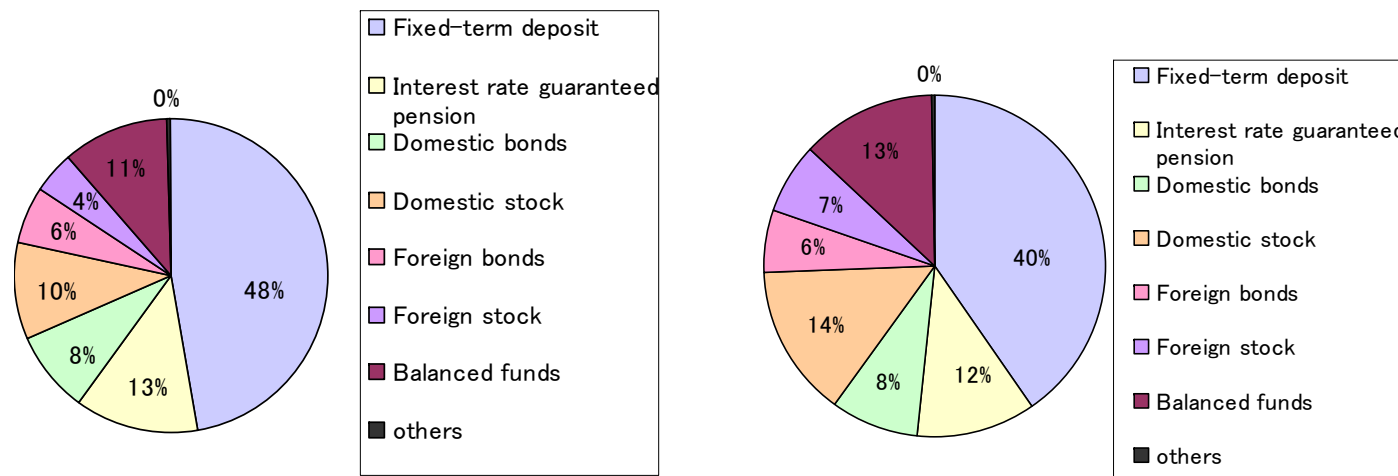


【source】 Created by Mizuho corporate bank from public information

9. DC plan

- The result shows the solid DC asset management of employees.
- Employees has allocated half or more of cash contributions to the guaranteed principal investment product and they have been maintaining its share of asset.
- These result might also show employees' disinterest toward the asset management of DC plans.

Allocated investment option of DC plan by asset (left) / by cash contribution (right)



9. DC plan

- The result of employees' consciousness test, the survey conducted by Mizuho Corporate bank, employees don't fully make use of WEB and a call center according to the attitude survey to the investment.
- In accordance with the analysis of investment option, employees seems hardly to pay attention to switch their asset allocation, although DC pension plan Law encourages employers for providing investment education to employees.

Employees' consciousness for investment

Employees consciousness of improving their investment (usage of services)		
Web	4,527 Times/plan	1.82 Times/head
Call center	115 Times/plan	0.05 Times/head
Switching (asset allocation)	172 Times/plan	0.07 Times/head

Considering that DC plans in Japan is different from the usual DC plans in foreign countries in that the benefit is often directly transferred from former DB plan, it is of great importance for employers to provide employees with good opportunities for investment educations for securing former benefit level.

10. Analysis of post employment benefit, and the ideas for risk sharing between employers and employees in Japan

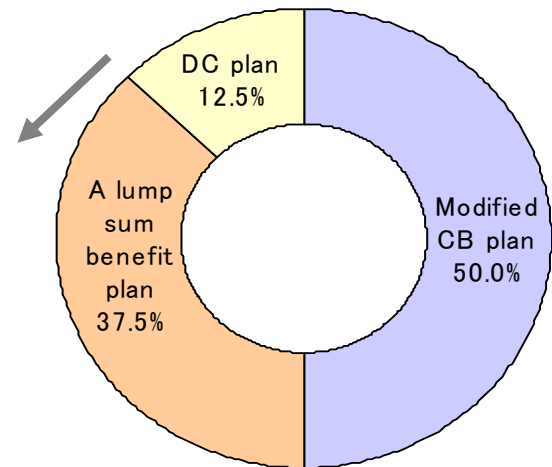
- The reason for adopting mixed combination of lump-sum /DB pension plan /DC pension plan is that employers seek risk sharing with employees under the environment in which the stock market become more volatile than before.
- By adopting mixed combination of lump-sum /DB pension plan /DC pension plan employers can seek risk sharing considering each plan's characteristics.

An example of the plan design (risk sharing between employers and employees)

Allocations of pension plans

Unique feature for DC plan:

A Ratio of DC plan increases as market interest rate increases



Features of each plan

Plans	Employer	Employee
DC plan	<ul style="list-style-type: none"> • Guarantee contribution • Avoid the risk of investing and aging 	<ul style="list-style-type: none"> • Receive benefits as a pension or a lump sum benefit • Principle of self-responsibility
Modified CB plan (DB plan)	<ul style="list-style-type: none"> • Guarantee a pension and a lump sum benefit • Bear the risk of investing and aging 	<ul style="list-style-type: none"> • Receive benefits as a pension or a lump sum benefit • Without investment risk
A lump sum benefit plan	<ul style="list-style-type: none"> • Guarantee a lump sum benefit • Control the magnitude of pension assets • Avoid the risk of aging 	<ul style="list-style-type: none"> • Receive benefits as a lump sum benefit • Without investment risk

Both of the items below

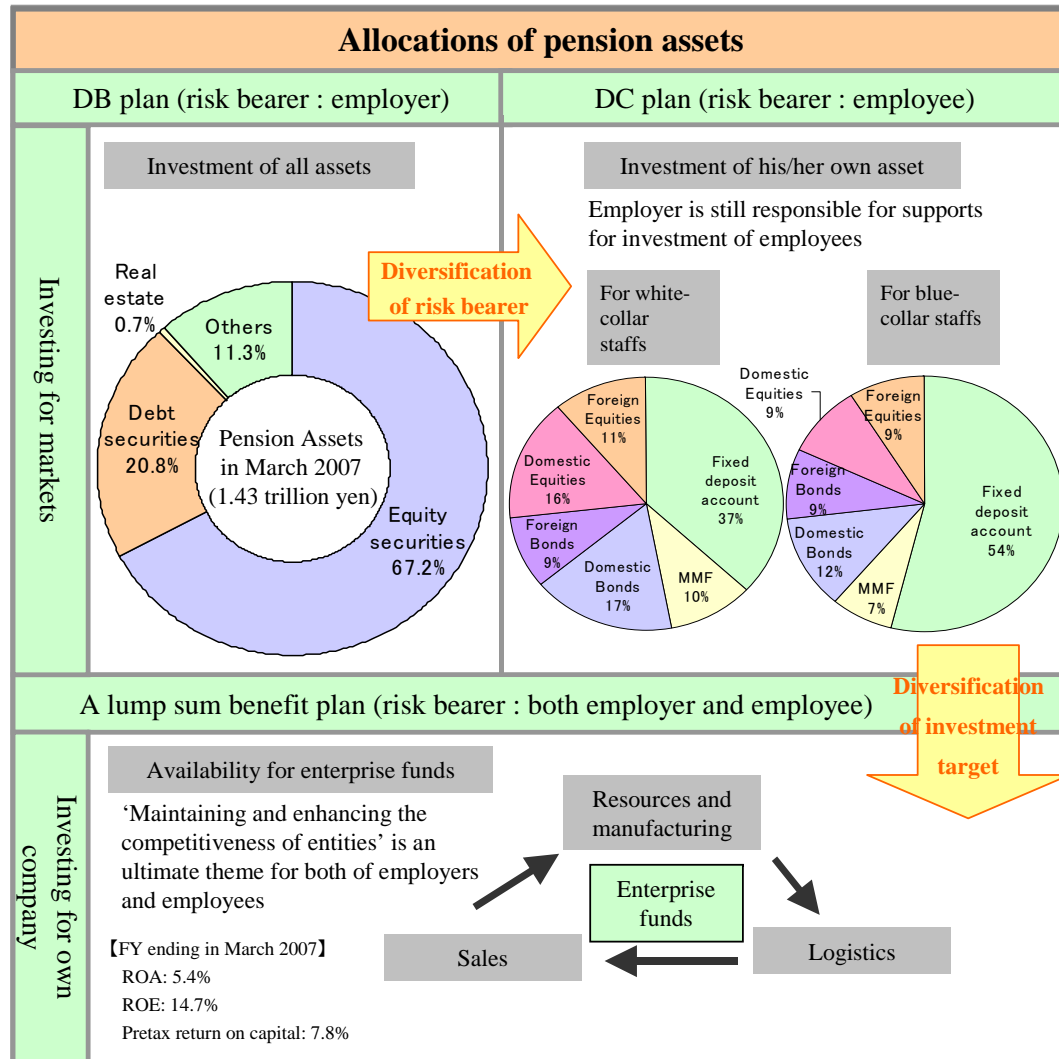
- Benefit level of a lump sum benefit plan
- Type of pension plan

affect the amount of liability (PBO) and the risk level of employers

10. Analysis of post employment benefit, and the ideas for risk sharing between employers and employees in Japan

- An example also shows the allocation of assets for pension funds under the management of employers and of employees, and/or investment for its own company.
- Thus, it could be fair to say that post employment benefit plans for some employers have been maturing to moderate shift to the plan with relatively stable design, although securing certain amount of benefit, under the changing environment surrounding post-employment benefits

The breakdown of the risk by plan assets (and plan design)



11. Taxation for pension benefit and lump sum benefit

- As the average total lump sum benefit (including a pension portion) of the university graduates are about 25,000,000 yen, it is obvious that most of the lump sum benefit is almost within tax deductible income.
- On the other hand, corporate pension benefits are often fully taxed, in consideration of other incomes such as aggregated public pension benefits or other labor incomes.
- Therefore, it could be said that the lump-sum benefit has much more preferential tax system than pension benefits.

Comparison between taxation for lump-sum benefit and pension benefit

	Lump sum benefit income	Pension benefit income
The amount of a tax	[(The amount of lump sum benefit) - (deduction for retirement income)] * 1/2* tax rates	[(The amount of pension benefit) - (deduction for public pension benefit)] * tax rates
Deductions from income	(deduction for retirement income) up to 20 years of service :400,000 yen / each year over 20 years of service :700,000 yen / each year	(deduction for public pension benefit) under 65 years over 65 years : usually applied completely with public pension benefit and with no additional private(corporate) pension benefit
A taxation method	Separate taxation : the amount of tax is calculated only for lump sum benefit	Aggregate taxation : Including other incomes, and graduated tax rate is applied for all the taxable income

12. Future prospects / Conclusions

Lots of issues to be addressed by employers / government / pension actuaries...

- **Future prospects of slimming down of public pension benefits**

Providing any option for lifelong annuities in the corporate pension plan plays a critical role for securing employees' stable old age lives.

- **Further expansion of risk sharing benefit schemes between employers and employees**

It is necessary for the government that lifelong annuities equivalent to the lump sum benefit is admitted, and this design will lead to provide the people for stable and inexpensive lifelong annuities.

As for DB pension plan, further expansion of risk sharing benefit schemes between employers and employees are needed to secure well-balanced pension schemes such as admitting flexible interest rate of cash balance pension plan index

- **Requirements for DB plan to retain adequate risk buffer for funding**

Current funding regulations make allowance for fewer than 100% funded status of pension plan. In the recent extreme market situations, it is true that political flexibilities are needed, but essentially, adequate funding for pension plan is the only way to secure the benefits of all the participants.

- **Providing guideline and monitoring for employers regarding periodical investment educations to employees for DC plan.**

As for DC pension plan, investment educations are only encouraged in the law regulations. Providing guideline and monitoring for employers regarding periodical investment educations to employees for DC plan from the point of view of protecting them.

- **Fairness of taxation between lump-sum benefits and pension benefits**

It is often the case that the form of lump sum benefit is tax preferable compared to the form of pension benefit in Japan. For encouraging receiving pension benefit, government should review the taxation between lump-sum benefits and pension benefits.

- **Establishing lump-sum benefit scheme maintaining appropriate benefit level under inflated economy, in preparation for it to come.**

Maintaining benefit level under the inflated economy has to be paid much more attention. Establishing the scheme to secure lump-sum benefit maintaining appropriate benefit level in real value under inflated economy is an essential topic. Deciding requirement of revision of benefit between employers and employees, adopting inflation related plan designs such as CB plan and/or modified CB plan, and the reference to the benefit model for public pension benefit could be the good examples of the way of thinking.