

# Current Situation of Pension ALMs for Japanese Corporate Pension Plans

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# Abstract

- **Pension ALMs, which were introduced to Japanese corporate pension plan management in the early 1990s, have become one of the most important tools for corporate pension plan management, particularly for setting investment strategies. The current situation of pension ALMs in Japan, including their methods and popularity, is reported on the basis of the statistical data available. The discussion on the possibility and usefulness of LDI will be also discussed.**
- **Keywords**  
**pension ALMs, investment strategies, LDI**

# Contents

## **1.Introduction**

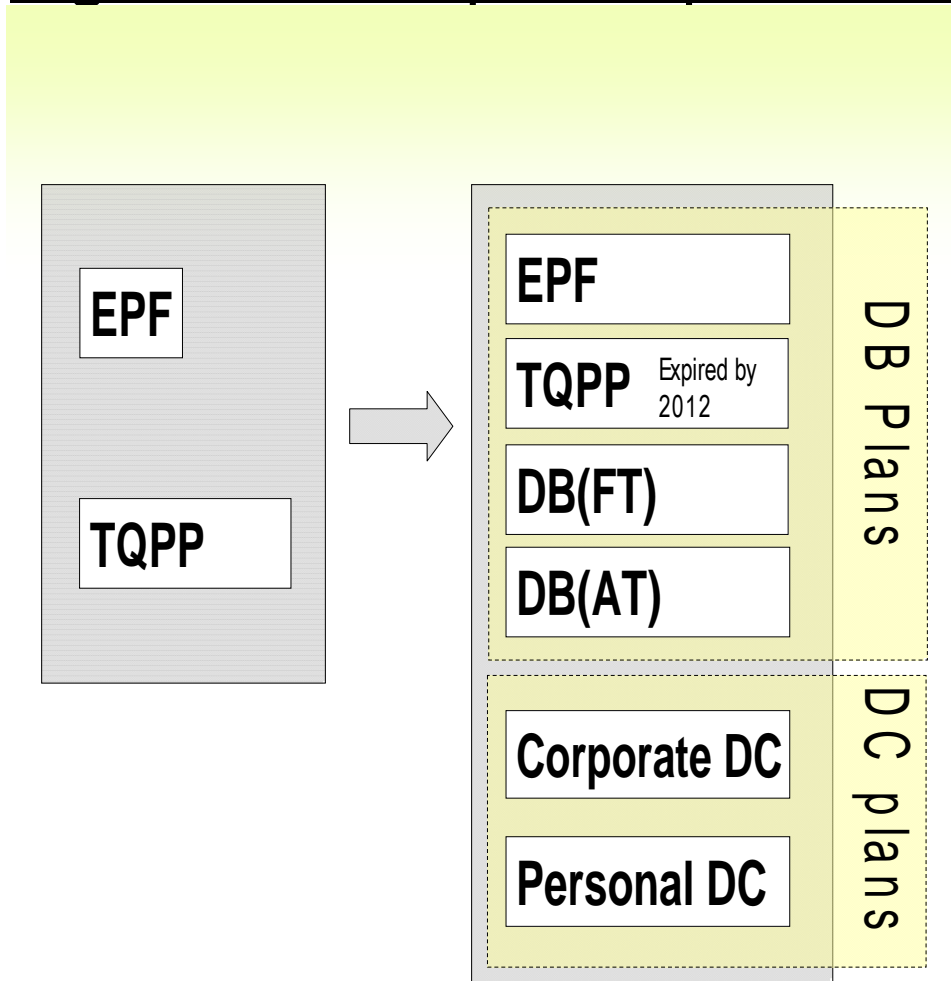
## **2.Historical review on Pension ALMs Introduction and Popularization**

## **3.Types of ALMs Used for Pension Funds in Japan**

## **4.Discussions**

## **5.Conclusion**

Figure 1. Corporate pension systems reform



**NOTE**

**EPF: Employees' Pension Fund**

**TQPP: Tax Qualified Pension Plan**

**DB: Defined Benefit Corporate Pension Plan**

**DC: Defined Contribution Plan**

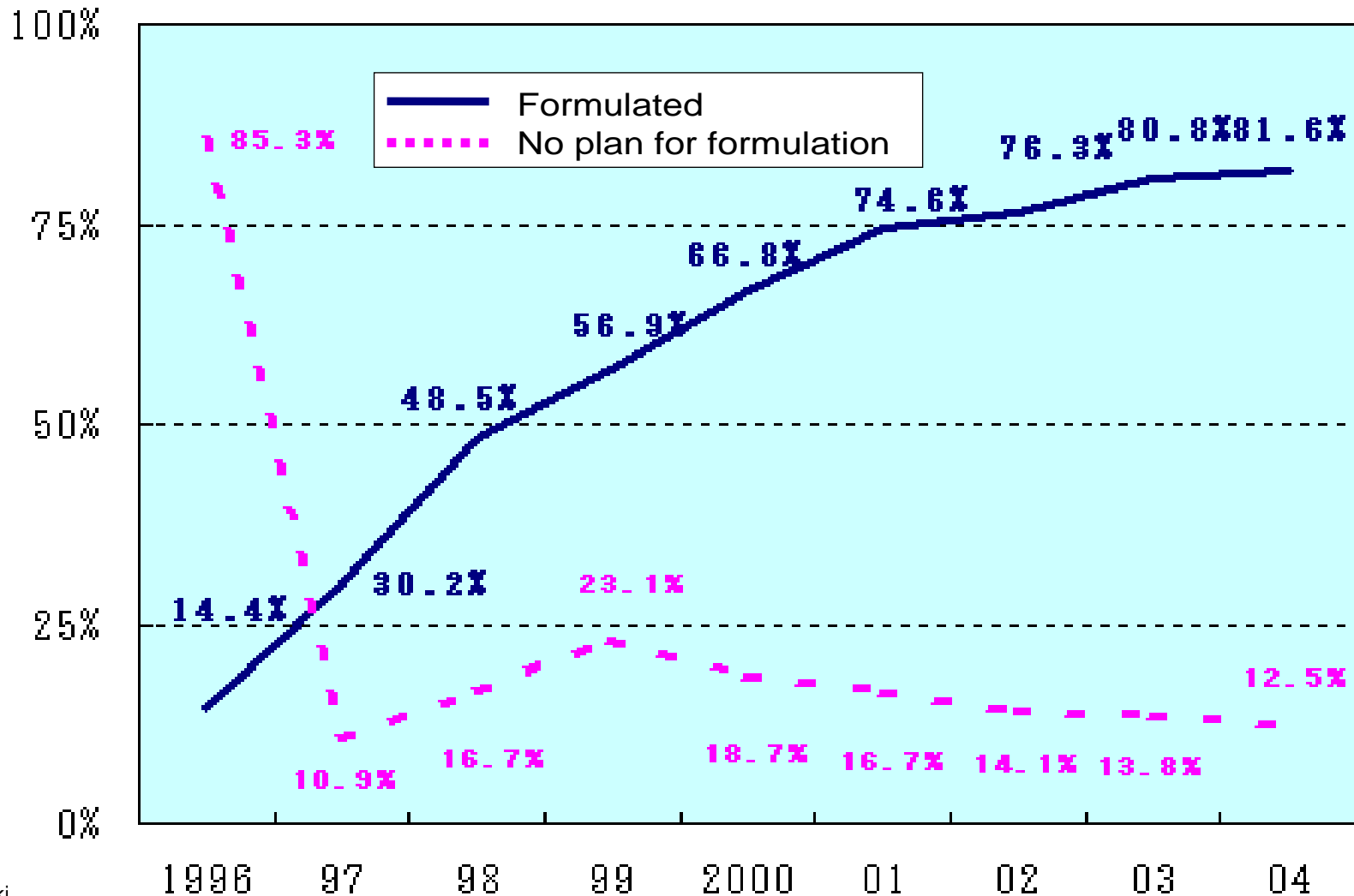
Table 1. Numbers of Corporate Pension Plans, Participants and Amounts of Assets ( as of Sept.1.2006. )

Plan Name	#Plans	#Participants	Vol.of Assets*
	(10thousands)	(Trillion yen)	
EPFs	672	530	31.1
TQPP*	45,090	567	15.6
DB(Fund Type)	603	384*	20.9
(Agreement Type)	1,607		8.3
DC ( Corporate Type ) ****	1,997***	197**	2.0+
• *2006.3	**2006.6	***2006.7	+Trust banks only

## Table 2 Chronological list on Pension ALMs in Japan

- **1980s Introduction of ALMs to financial institutions**
- **1991 R.C.Urwin gave a lecture on Pension ALM**
- **1997 Asset became evaluated on the basis of market value( EPF )**
- **Abolishment of investment 5:3:3:2 regulation( EPF )**
- **Deregulation of discount rate assumption( EPF )**
- **Guideline on roles and responsibilities for investment managers( EPF )**
- **2000 Introduction of accounting standards for retirement benefits**
- **2004 Charge for ALM study became payable from Funding Account( EPF )**
- **Late 90s-early00s Pension ALMs became popular**

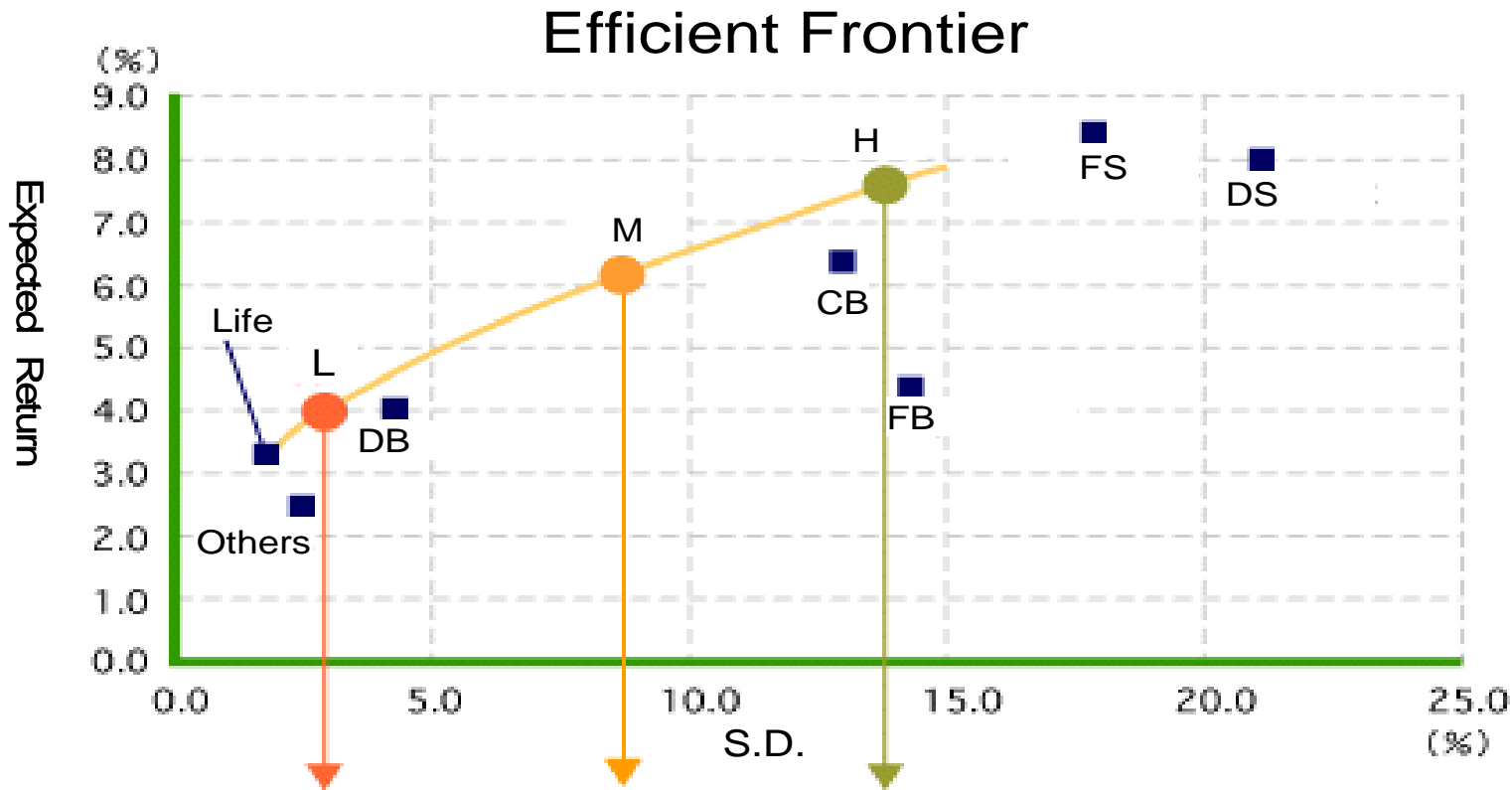
# Figure 2 Percentages of EPFs Formulating Strategic Asset Mix



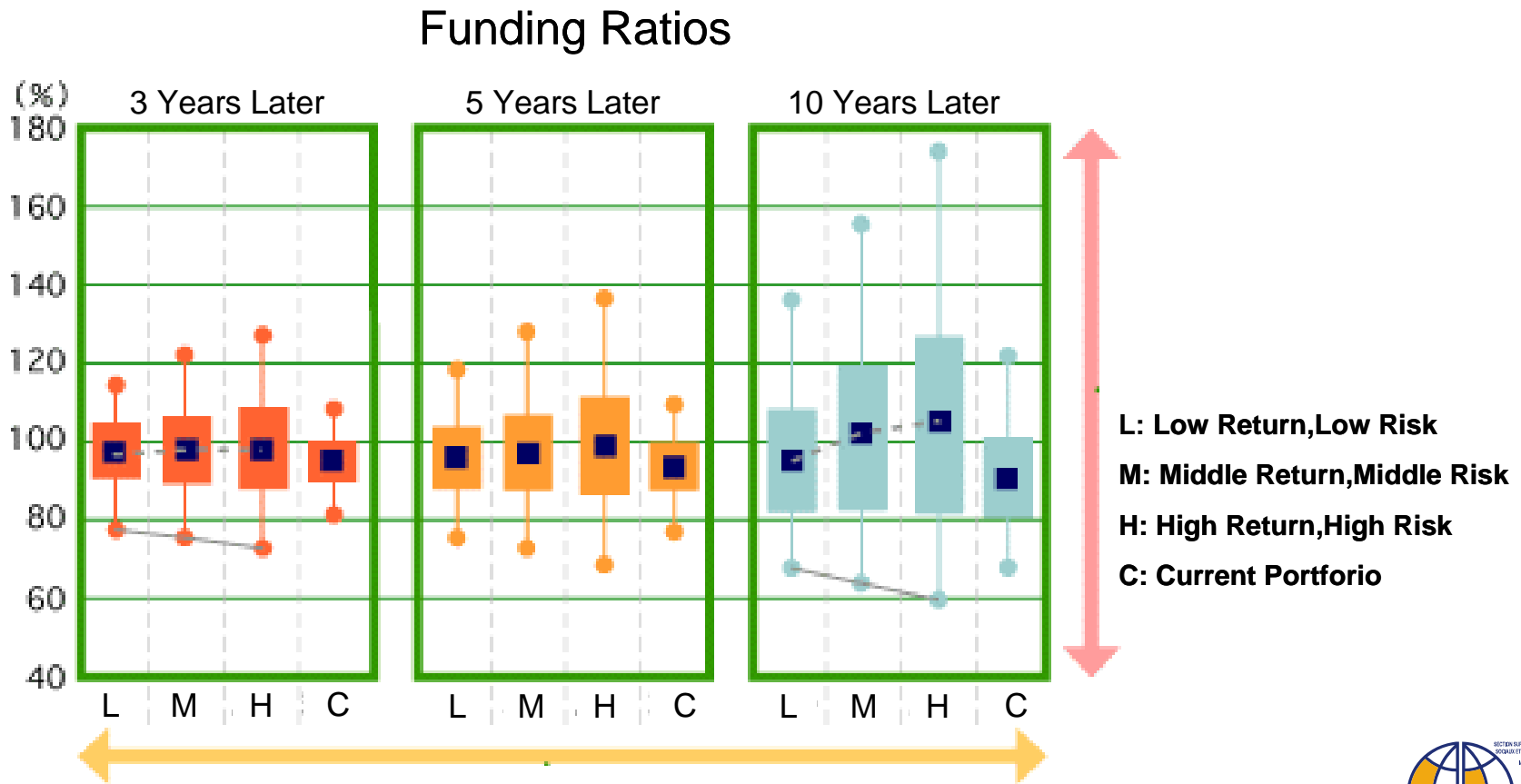
## Figure 3 Classification of Pension ALMs

- (1) Simulation type ALMs
- Pension ALMs     (2) Balance sheet type ALMs
- (3) Optimization type ALMs
- (3a) Scenario methods
- (3b) Parameter methods
- (3b-1) DP\*
- (3b-2) MP\*\*
  
- Notes: DP\*=Dynamic programming, MP\*\*=Markovian programming
- Source: Yamashita and Yato (2002)

Figure 4 Typical Output in the Simulation Type  
ALMs



## Figure 4 Typical Output in the Simulation Type ALMs



## Discussions

### 1.Necessity of Pension ALMs

#### Financing DB plan

- (1) stable liability and stable asset evaluations, or
- (2) mark-to-market liability and asset evaluations and manage their volatility by ALM.

**Simulation type ALM- more sophisticated ALM**

## Discussions

### 2. On the Liability Driven Investment (LDI)

#### What is LDI?

#### NAPF(2007)

(1) Creating a least risk portfolio

(2) Risks and setting performance targets

(3) The strategy for active managers to perform better than the overall market

(4) Putting the strategy into practice

## Discussions-conti.

### Kaneko(2007)-What will change by introducing LDI

- (1) Bond investment matched with pension liability
- (2) Investment with bond benchmark to with pension liability benchmark
- (3) To use derivatives when necessary
- (4) Performance is evaluated with liability benchmark
- (5) Liability analysis becomes more important

## Discussions-conti.

### Usuki(2006)

- Funding regulation ? No
- Accounting standards? Possible

## Conclusion

- The Japanese corporate pensions system has dramatically reformed around 2000, including the introduction of DC plans.
- DB plans are still dominant and it is very important to manage corporate pension plans in a financially sound and sustainable way. To do that, ALMs, which were introduced to Japan in 1990s, are a very useful tool for corporate pension plan managers.
- ALMs have already been widely used by Japanese corporate pension plans.
- But they are simulation type ALMs, so the corporate pension plans might require more sophisticated ALMs such as balance sheet type ALMs, optimization type ALMs or LDIs, when the historically low interest rate will be recovered.