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Future of the Performance-based Pay System in Japan

Contents

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CONTENTS

Future of the Performance-based Pay System in Japan

Articles

Articles Based on Research Reports

NEXT ISSUE (Summer 2007)

The Summer 2007 issue of the Review will be a special edition devoted to **Recent Tendencies of Labor Legislations**.

Introduction

Future of the Performance-based Pay System in Japan

Since the second half of the 1990s, Japanese companies have adopted and operated the "*Seikashugi* (performance-based pay system)." Changes from the Japanese traditional pay system based mainly on the service years and age to the performance-based pay system have resulted in various confusions among companies and employees in Japan. Two opposite opinions have been applied to the case that the performance-based pay system introduced does not work well in Japan in a sense that productivity does not improve or that many complaints arise from employees. One opinion is that the introduction of the performance-based pay system is essentially wrong because the system is not fitted at all to Japanese culture or Japanese company management. Another opinion is that the failures of the introduction in many Japanese companies are attributable to their inadequate operations of the introduced performance-based pay systems. Considering these two completely different opinions, we can say that the Japanese society has not yet finalized the evaluation of the performance-based pay system adopted by many companies in Japan.

What analysts have to do in this circumstance is, we think, to analyze the significance of introducing the performance-based pay system as objectively as possible. Based on such concept, the current issue collects five papers analyzing the performance-based pay system at this time that 10 years have passed since the introduction of the system. More specifically, this issue discusses the significance of the performance-based pay system introduced, what changes in economic environment existed behind the introduction of the system and how workers have understood and reacted to the system.

From the perspectives of the standard personnel economics, Masahiro Abe has taken up and analyzed the question of why Japanese companies have introduced performance-based treatment and reward systems. According to a theory on the optimum reward system available in the personnel economics, a work performance ability system is likely to create moral hazard problems. Abe also discusses issues in actual performance-based pay systems. Neither the

him to explain various issues related to performance-based wage systems.

Through case researches, Mitsuo Ishida has clarified how the wage reforms in Japan have changed since the 1980s. He summarizes the recent wage reforms as follows: (1) The wage system has been diversified; (2) The diversification is a result of the accelerated involvement of wage system management in the business model of individual companies; (3) In parallel to diversification, the core of the wage system has been substantially reformed from the system of the 1980s.

Regarding the diversification of the wage system, there are two very different examples, namely Company B, a distribution and retail company, which has adopted a performance-based system, and Company F, a steel maker, which has maintained the system emphasizing seniority-based treatment. The wage system reform has been initiated by management reform, followed by job management reform and then by personnel reform. In other words, the reform of business model has inevitably resulted in a change in wage system, meaning the diversification of business models has led to the diversification of wage systems. Concerning the core systems in the diversification of wage systems, Ishida thinks that with the concept of "role," employee grade, base pay and personnel evaluation will be based mainly on the "role grade" system, "role pay" and "competence evaluation and performance evaluation," respectively.

Shingo Tatsumichi and Motohiro Morishima have analyzed the actual status of introduced *Seikashugi* (performance-based pay system) from an employee perspective in terms of the following: (1) Worker's perspective of *Seikashugi* itself; (2) The effect of the wage differential, created by *Seikashugi*, on working mentality, and (3) The effect of introduced *Seikashugi* on the commitment and satisfaction level of workers. Based on the analysis of workers' perspectives of *Seikashugi*, they have clarified the following three points: (1) Many workers favor the concept of emphasizing business results, work experience and ability over using the seniority system as a wage distribution principle; (2) As for assessments of *Seikashugi* in one's company, many workers praised it by saying, "This system elicits personal motivation," or "This system facilitates fair treatment of personnel," and "This system improves a company's overall business performance." Nevertheless, workers have doubts regarding the

general question, “Is the *Seikashugi* system in my company working successfully?” Finally, (3) Many workers believe there are problems with *Seikashugi* in terms of assessment methods and application, and as a result many workers become dissatisfied with the system in its early stages.

As a result of the analysis of wage differential, the following two points have been identified: (1) An increase in the wage differential leads to a decrease in the satisfaction regarding the assessment of wages and bonuses; (2) On the other hand, in companies with sufficient personnel measures for ensuring a satisfaction, an increase in the wage differential does not lead to a decrease in the satisfaction regarding the assessment of wages and bonuses. In short, in terms of the wage differential fairness, perceptions of employees in companies that seek to make them more receptive to the wage differential differs from those in companies that do not.

According to the results of their analysis, the introduction of performance-based pay system have had unprecedentedly substantial impact on workers, while workers’ lifestyles and mental status are becoming increasingly unstable. Considering these points, Tatsumichi and Morishima have concluded that further investigations are necessary regarding stable labor-management relationships and workers’ lifestyles believed to be maintained by traditional Japanese employment practices.

Have employees really and accurately understood the contents of the reformed wage system? Hisakazu Matsushige has tackled this question from statistical viewpoints, combining human resources data on employees from a specific company with the results of a questionnaire completed by the same employees. As a result, it has been verified that the knowledge of workers concerning the human resources policies and wage structures is not necessarily sufficient, and especially, that the overall image employees have of their salaries is substantially different from the reality. Furthermore, it has been verified that the competency of employees has a positive correlation with the accurate comprehension of human resources policies, though this competency does not necessarily share a strong correlation with their knowledge of wage structures.

According to Matsushige’s opinion, in situations where employee knowledge regarding human resources policies is insufficient and employee

work performance ability system nor the actual performance-based pay system is a complete system in the sense that neither system is the first best reward system.

It has been often pointed that reduction in labor management costs is a main reason why Japanese companies have tackled the reform of personnel system and introduced performance-based pay systems since the 1990s. Abe, however, pays a close attention to technical innovation and corporate governance. According to his opinion, changes in corporate management environment caused by technical innovation and corporate governance changes, and the aging of employees, have increased the number of the companies that try to adopt the performance-based pay system. Whether the work performance grade or the role grade is applied, there are few companies which apply personnel assessment only by the objective performance index in the Japanese performance-based pay system. In relation to this, there is also the criticism that the performance-based pay system does not work well since the performance index are not sufficiently prepared. However, the subjective index are still effective. The fact that workers become aware of the performance-based pay system having been introduced have played a role of an incentive for such workers.

Kohei Daido has analyzed performance-based wage systems using contract theory. His thesis is characterized by the models that consider the effect of wages on working mentality from behavioral economics viewpoint. Firstly, he identifies how wage gaps are enlarged in the case that workers have social preferences dependent not only on the agent's own remuneration but also on the remuneration of others. Secondly, he introduces the economics model that analyzes the "crowding-out effects" of motivation that show how the incentives given to workers in order to enhance their motivation have resulted in lowering it to the contrary. Thirdly, considering the psychological effect resulting from the delegation of responsibilities, he introduces the recent paper that analyzes the effectiveness of the performance-based pay system. This is because the issue of delegation of responsibilities has been taken up as one of the requirements for the performance-based pay system to function. The introduction of workers' psychological traits in the contract theory has allowed

Why Companies in Japan Are Introducing Performance-based Treatment and Reward Systems*—The Background, Merits and Demerits

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1. Introduction

Recently, companies in Japan, especially large companies, have been reviewing their employee treatment and reward systems. Companies in Japan had adopted a treatment and reward system based on a work performance ability system, but this was abolished and a movement to introduce a system that emphasizes an employee's performance and achievement has been gaining momentum. Table 1 shows the number of articles with headings using the phrase performance-based pay system or achievement-based pay system on the front pages of the morning or evening editions of four newspapers published by Nikkei Inc. According to this table, it can be seen that the number of companies that introduced a treatment and reward system based on the performance or achievement has increased since 2000. This paper examines the background and the merits and demerits to this trend, based on the incentive theory discussed in economics circles as to why companies in Japan are introducing performance-based treatment and reward systems.

Table 1. Number of articles in newspapers concerning the performance principle (four newspapers published by Nikkei Inc., total of the morning and evening editions)

Year	Number of articles	Year	Number of articles
1995	2	2000	32
1996	5	2001	38
1997	25	2002	25
1998	17	2003	56
1999	34	2004(January to February)	12

* As this paper is written to re-evaluate the recent introduction of the performance-based pay system in Japanese companies from the viewpoint of the economics of human affairs, it is not necessarily intended for researchers. Therefore, it deals with the contents at a "textbook" level and is not a "specialist" thesis.

2. Merits and demerits of performance-based reward systems

Designing the optimum reward system is the biggest issue for company personnel directors, and at the same time, it is also a major research topic in the sphere of the economics of human affairs. Roughly speaking, the optimum reward system gives not only maximum profit to companies, but also the maximum incentive to workers at the companies concerned. If a company pays a worker independently from his/her performance, he/she might not act in the interest or benefit of the company. When asymmetrical information exists between a company and its workers, a moral hazard problem is caused only by a perfectly fixed salary system.

Then what is the optimum reward system? The economics of human affairs takes an approach to this problem based on the principal-agent theory. Companies should work to align the behavior of workers who belong to their organization towards the goals of their organization. To do so, there needs to be smooth communication between companies and workers, and workers need to be motivated. In the real labor market, information conveyance via price is difficult, and the asymmetric information problem exists between companies and workers. The mechanism to overcome such a problem is called an "incentive," and incentives must be present in the optimum reward system.

2.1 Deriving the Optimum Reward System[1]

In the economics of human affairs, the reward system of companies is discussed using the expression:

$$w = \alpha + \beta x \qquad (1)$$

The left side, *w*, of the expression (1) is the wage paid to a worker, and the right side, *x*, is the output of a worker that the company can observe.[2] Moreover, α and β are coefficients.

The worker makes an effort to produce Output *x*. The higher the effort level *e* is, the higher the production level of the Output *x* is, which does not depend on only *e*, but on "Fate" η, as well. Let's use a concrete example to explain this

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1 Milgrom and Roberts (1992) argued in detail about the optimum income model that assumed risk-averse workers. Section 2.1 is written for readers who are not familiar with this, and it may be skipped.

2 The worker's Output is specifically the results of work, product of work or role in work. Output here does not necessarily indicate sales etc. which can be directly represented monetarily.

"Fate" variable through the following example about a certain car dealer. A worker at this company must work hard to sell as many cars as he can. Car sales are influenced not only by how hard this worker works, but also by the strength of demand for cars by customers, etc. The strength of the demand for cars by customers is influenced by business trends and the preferences of customers, etc, which are decided indifferently to the effort of the worker. Simply put, the sales total x of cars in a certain month depends on "Fate" η in addition to the degree of the worker's effort level e and the strength of customer demand.

Thus, the following expression is obtained:

$$x = e + \eta \qquad (2)$$

where e is the worker's effort level, and η is "Fate", the elements other than the worker's effort which influences the worker's output, which is a random variable with a mean of zero（E(η)=0） and the variance v. Hence expression (2) means that if the worker's effort level rises, the average output x rises, too, but the output is also influenced by "Fate" stochastically.

By combining expression (1) and expression (2)

$$w = \alpha + \beta(e + \eta) \qquad (3)$$

is obtained. Since E(η) = 0, the expected value of expression (3) is:

$$w^e = \alpha + \beta e \qquad (3)'$$

Compared with expressions (3) and (3)', we can see that the wage w depends not only on the effort level e, but also on "Fate" η, but the average wage w^e (expected value of the wage) depends only on the effort level. This means that the wage of a certain month might be high according to "Fate," but only a worker's effort level will decide their wage on average.

In the expression (1), what value the coefficients α and β take determines whether the wage system is performance-based or not. If α is positive and β is 0, the wage system for the worker is the fixed reward system because α is always paid unrelated to the performance of the worker. If β is positive, the wage paid to the worker also responds to the worker's output, which is a floating reward system.

As described above, the optimum reward system should be a system that not only maximizes the profit of companies but also improves the worker's work incentive. Workers prefer high wage income; however, they do not prefer to make extra effort. Assuming that a worker is risk neutral, the utility function concerning his/her wage income-effort is defined as follows:

$$U(w^e,e) = w^e - \delta\frac{e^2}{2} \qquad (4)$$

where δ is the coefficient showing the degree to which the worker does not like expending effort.[3]

On the other hand, assume that the company employs one worker and costs other than labor do not exist. The management purpose of this company is to maximize the (expected) profit Π. That is,

$$\begin{aligned} E(\Pi) &= pE(x) - w^e \\ &= (p-\beta)e - \alpha \end{aligned} \qquad (5)$$

where p is the price of the product, and p-βis the profit per unit of the product.

In this situation, how will the worker determine their effort level?

By solving the following expressions:

$$Max_e : U(w^e,E) = w^e - \delta\frac{e^2}{2}$$

$$\text{s.t.} \quad w^e = \alpha + \beta e$$

the worker's optimum effort level is obtained. That is,

$$e^* = \frac{\beta}{\delta} \qquad (6)$$

This means that (a) an incentive is necessary to make workers work hard and (b) the worker's effort level reaches a maximum at β=p.[4] Expression (6) is also a condition for companies to give workers efficient work incentives, which is called the Incentive Compatibility Constraint.

Do workers elect to work for companies that use this reward system? The optimum reward system argued in the economics of human affairs takes it as a premise that the labor market is flexible and that workers always hold the "Outside Option,"—that is, they are prepared to change jobs anytime. If a worker works at this company, his/her utility level is:

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[3] The characteristics of this utility function are that the marginal utility concerning the wage income is $\partial U/\partial w^e = 1$ and the marginal utility concerning the effort is $\partial U/\partial e = -\delta e$. Therefore, under this assumption, the more the worker marginally increases their effort level, the more cost is required, until the point where the utility level remains the same even if the wage income rises.

[4] The maximum value of β is p as shown at the expression (5). At β= p, the profit of the company is zero.

awareness of their actual status is inaccurate, changes in these policies will not bring about the desired results. It can be argued that in order to change working mentality, it is necessary to upgrade the level of their knowledge regarding human resources policies.

We hope that you will read these five papers to deepen your understanding concerning the present status of and background behind the reform of wage systems in Japan and how workers understand and react to that reform.

Fumio Ohtake
Osaka University

$$U(w^e, e) = \alpha + \beta e^* - \delta \frac{e^{*2}}{2} \qquad (7)$$

whereas expression (7) fulfills expression (6). Only when the utility level at this point is greater than the utility level *u* obtained by the "Outside Option" is he/she certain to elect to work at this company. That is,

if $U(w^e(e^*), e^*) \geq u$,

then he/she elects to work at this company. (8)

Here since $w^e(e^*) = \alpha + \beta e^* = \alpha + \frac{\beta^2}{\delta}$ expression (8) becomes

$$\alpha + \frac{\beta^2}{\delta} - \delta \frac{\beta^2}{2\delta^2} \geq u$$

which is reduced to

$$\alpha + \frac{\beta^2}{2\delta} \geq u \qquad (8)'$$

which is called the Participation Constraint.

Companies will decide the value of α and β under the above-mentioned Incentive Compatibility Constraint and the Participation Constraint. In the meantime, in terms of the Participation Constraint workers prefer to work at this company if their utility level is greater than the utility level obtained at the "Outside Option," therefore companies only need to set the level of α to be

$$\alpha = u - \frac{\beta^2}{2\delta}$$

Then expression (5) becomes

$$\begin{aligned} E(\Pi) &= (p - \beta)e^* - \alpha \\ &= (p - \beta)\frac{\beta}{\delta} - \left[u - \frac{\beta^2}{2\delta} \right] \qquad (5)' \\ &= \frac{p\beta}{\delta} - u - \frac{\beta^2}{2\delta} \end{aligned}$$

Companies only have to decide β to maximize expression (5), that is

MaxE(Π)

Then,

β=p (9)

Put simply, companies only have to make the value of β equal to the price p of the product.

Therefore, the optimum reward system of companies becomes

$$\alpha = u - \frac{p^2}{2\delta} \qquad (10)$$

β=p

and workers accept working at the utility level e^* equal to the utility level obtained at the "Outside Option," which is

$$e^* = \frac{\beta}{\delta}$$

whereas $u \leq \frac{p^2}{2\delta}$ and α<0. In general, the reward system where α<0 and β= p is called the Franchise Agreement.

2.2 Problems with the Work Performance Ability System

Now assume that a company adopts the fixed reward system and

$$w = \alpha$$

Then, the wage income which a worker receives is α regardless of the effort level, and the expected wage w^e becomes equal to α, too. At this point, the increase in wage income that he/she receives is zero even if the worker increases their effort level, and the worker's optimum effort level becomes zero. This result is just the moral hazard problem mentioned above.

Many Japanese companies have thus far adopted an income management system using the work performance ability system. The work performance ability system is basically a qualification system rated according to the job performance ability of individual workers, which is not necessarily the fixed reward system. However, because work performance ability increases through taking on-the-job training and accumulating experience, as a result it will strongly correlate to workers' age and years of service. In fact, in research that measures the wage function in Japan it is often reported that age and years of service have a positive influence on wages. Of course, the promotion standards in the work performance qualification system are provided by individual firms. There is not a small promotion gap between workers, and an income gap can also be observed. However, the income gap is generally small, and though the work performance qualification system is nominally based on "ability," it is actually a system applied according to years of service where income is determined by years of service.[5]

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[5] In the meantime, so far most of the measurement consequences of the wage function have shown that the values of the presumed coefficient are larger and the interpretability

Take the example of a company that introduced a performance-based personnel system in 2000. It is a trading company that specializes in FA (Factory Automation) systems, electronic devices, and information communication devices, etc. The company is listed in the first section of the Tokyo Stock Exchange and about 1,000 workers are employed at the company. (The average age is 38 years old and the average years of service is 14 years.) Earnings in 2001 were about 170 billion yen in a consolidated financial statement. Earnings in the construction, environment, and FA sections occupied 70 % of the total for this company in early 1990s, but now earnings in the electronic device and the information communication device sections have reached up to 70-80 % of total earnings.

Until 2000, the personnel system at this company was the general work performance qualification system (Figure 1). However, the councilor, sub-councilor, counselor, and sub-counselor positions in the work performance qualification system, that is, all of the management staff, was combined into a

Figure 1. Line and work group/position grade in a certain trading company

Line and work group/position grade in B company

Before 2000	Since 2000					
	Comprehensive work line				General work line	
Qualification	Work group	Qualification	Position grade		Work group	Qualification
Councilor Sub-councilor Counselor Sub-counselor	Senior Compre-hensive Work		Manager Management staff of organization	Professional Position specialized in work		
Director General work, 1st grade General work, 2nd grade	Compre-hensive work	Director General work 1st grade General work 2nd grade	Comprehensive work		General work	Chief Sub-chief Specialist General work - 1st grade - 2nd grade - 3rd grade

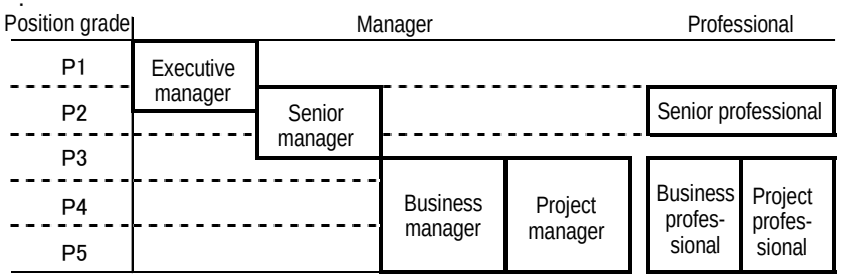
Source: Personnel materials in a certain trading company.

is more powerful for age rather than years of service. Based on this, Ono developed the “life security hypothesis,” and Ohashi also developed the “life security hypothesis.” If Japanese companies have thus far designed their income system in consideration of the life security of the worker, it is very easy for the income system to cause moral hazard problems for workers, as noted in the discussion below.

single general upper management position work group in a reform of the system in 2000. At that time, the company began to be run with two official positions, managers and professionals. The position grade in the new personnel system at this company ranges from P1 to P5 (Figure 2).

Figure 2. Work group/position grade group for the senior comprehensive work in a certain trading company

Work group/position grade group for the senior comprehensive work in B company



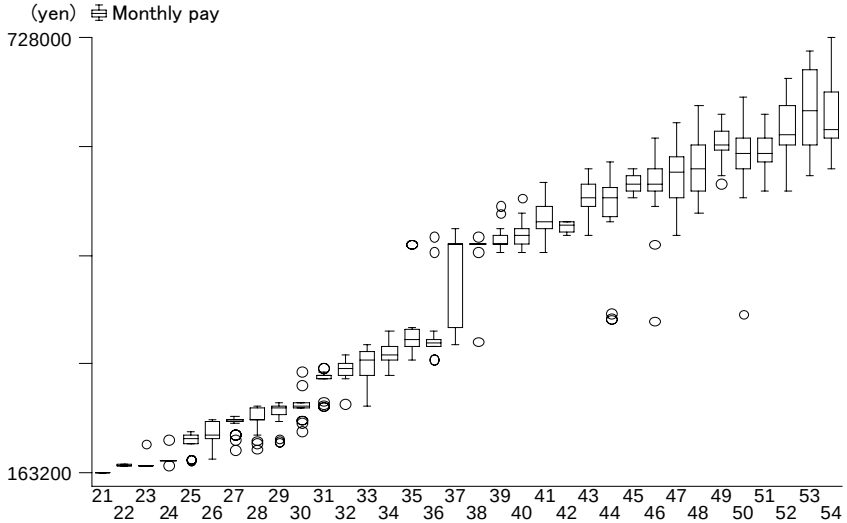
Job group	Job title
Executive manager Senior manager Business/project manager Business/project professional	Director of the headquarters/Representative of the branch/Enterprise manager/Vice-representative of the branch/Group leader of the enterprise headquarters/ Director of the branch/Vice-director of the branch/section chief/group leader/Exclusive duties other than executives in the organization

Source: Personnel materials in a certain trading company.

Before the personnel system was reformed, the age-income profile of this company in 1996 is shown in Figure 3 (The horizontal axis represents the age, and the vertical axis represents the monthly pay [not including bonuses]). This figure shows that the income profile when the work performance qualification system was in use was the standard seniority wage system, where wage income increases with age (or years of service). It was a company where the wages of the middle and senior age groups fluctuated at a range of roughly 150 thousand yen with small wage disparity.

Thus during the era of the work performance qualification system, a fixed reward system based on years of service was formed. There is a possibility that the moral hazard problem occurred here. In fact, as shown later, in this company the assessment point (original score) of workers with a high work performance qualification were not always higher than the assessment point of workers with a low work performance qualification, and there was also a year-to-year decrease

Figure 3. Age and wage profile before the personnel system reform (1996)



Source: Revised from the personnel data from a certain trading company.

in the assessment point of the former. The result of treating workers who were not always high in their job performance achievement ability by their years of service was that there remained many workers with insufficient performance achievement and low work morale.

After reforming the personnel system (i.e. the performance-based principle was introduced), although the age-income profile of the general staff group remained the same as before 2000 because the personnel system there was not reformed, in the case of the management staff group the average values are roughly horizontal and incomes fluctuate up to about 300 thousand yen (Figure 4).

2.3 Problems with the Performance-based Principle

However, in solving the personnel problem by adopting the performance-based reward system, the following problems may be caused:[6,7]

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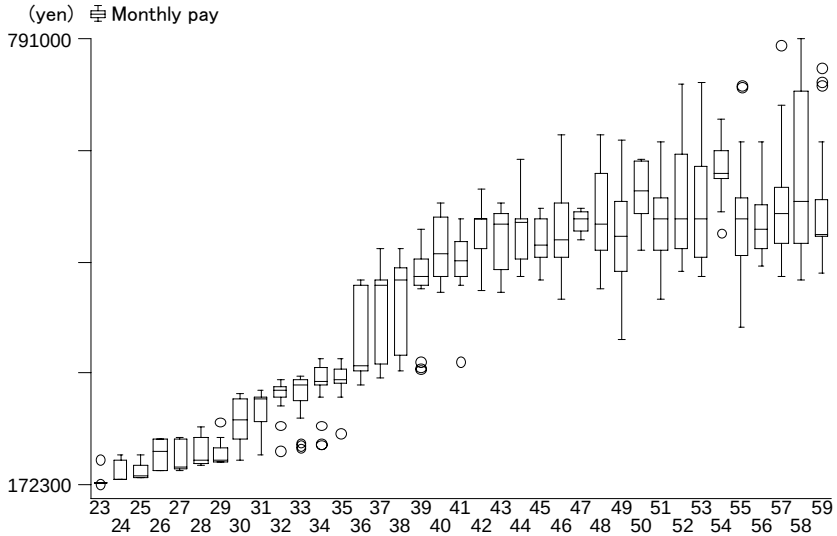
[6] The problem point enumerated below corresponds to the point where it is impossible to explain the present personnel system by the use of the simple Principal-agent theory. As seen above, the real, appropriate assumption is not set up as a precondition derived by the optimum income system. However, by observing how the First Best

Figure 4. Age and waged profile after the personnel system reform (2001)



Source: Revised from the personnel data from a certain trading company.

Non-negative income restriction

One of the important consequences of the optimum reward system derived above is $\alpha<0$. Simply put, this means that if a worker's output is small, he/she must return the negative part α to the company. However, a system with negative income is unrealistic for employers.

Now assuming that the "Outside Option" for workers is zero and that the optimum reward system is in place with a restriction that α is non-negative, $\beta=\frac{p}{2}$ and $\alpha=0$ are obtained. At this point the worker's effort level is $e^{*}=\frac{2\beta}{2\delta}$. That actually shows that the First Best optimum income, based on Principal-agent theory, has problems, and that when the constraint that the fixed income α is non-negative is assumed, the incentive strength and the worker's effort level become half those in the case of the franchise agreement.

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solution is obtained by changing the assumption, one can forecast the problems of the income system that actually could possibly happen. Though there are criticisms that the personnel economics still remains at a high abstract level and cannot explain the real personnel system, it is significant in the sense that it can focus on the problems of the income system.

[7] Various other problems are pointed out. Refer to Prendergast (1999) for details.

Risk-averse workers

Moreover, the optimum reward system derived above was a result obtained by assuming that workers were risk-neutral. However, it is generally thought that workers are risk-averse. That is, the higher the expected wage income of a worker is, the higher the utility level is, whereas the more *Var*(*w*) fluctuates, the more the utility level decreases. When assuming a risk-averse worker, a worker's utility function using the following expression is obtained:

$$U(w,e) = w^e - \lambda Var(w) - \delta\frac{e^2}{2} \qquad (11)$$

where λ is the parameter which shows the degree of the worker's risk aversion. At this time, the Incentive Compatibility Constraint is:

$$e^* = \frac{\beta}{\delta}$$

which is the same as that obtained when assuming a risk-neutral worker, while the Participation Constraint is:

$$\alpha + \beta^2\left[\frac{1-\lambda v2\delta}{2\delta}\right] \geq u \qquad (12)$$

where *v* is equal to Var(x). Expression (12) shows that the greater *v,* that is the fluctuation of output *x* , becomes, the fewer the workers who will continue to work at this company under given α and β.

Moreover, the optimum reward system of a company becomes:

$$\alpha = u - \frac{p^2}{(p+2\lambda\delta v)^2}\left[\frac{1-\lambda v2\delta}{2\delta}\right] \qquad (13)$$

$$\beta = \frac{p}{p+2\lambda\delta v} \qquad (14)$$

That is, when taking a risk-averse worker as the premise, the value of β becomes at least smaller than that of the franchise agreement, which weakens the Incentive strength by that much.

Flexible labor market

As a precondition for the optimum reward system, it is assumed that the labor market is flexible and that it is comparatively easy to leave and change jobs. If it is difficult to leave and change jobs and the Outside Option is zero, the value of α becomes a non-positive value from expression (10). Simply put, the reward system will become such that the worker pays a compensation to the company beforehand (like a franchise joining fee) or the worker compensates

the company when their accomplishments are lacking.

In reality, the actual situation doesn't go to such extremes, but when the Outside Option is insufficient, the following problems occur: Lazear (2000) reported that, as a consequence of introducing a reward system corresponding to production at the car glass repair company Safelite in the United States, workers' incentives not only rose, but also a sorting effect occurred where only workers with high productivity continued to work while workers with low productivity left. It is thought that the earnings of companies increased due to the simultaneous influence of the incentive effect and the sorting effect in the performance-based reward system, for which it is prerequisite that a flexible labor market exists where it is easy to leave and change jobs. Lazear analyzed the labor market in the United States to confirm the sorting effect, but to the author's knowledge, it is uncertain whether the sorting effect occurred in companies in Japan that changed to the reward system.

The Research Section of the Japan Institute for Labour Policy and Training carried out a "Survey on the corporate governance of companies and CRS." The following four possible answers were provided for question 14 in the survey, regarding the future of the company's lifetime employment policy: 1. Hereafter, in principle lifetime employment will be maintained. 2. A partial correction is unavoidable. 3. A basic review is necessary. 4. A lifetime employment policy has never been in place.[8] Table 2 shows the answer to question 14. 60 % of companies answered that they would maintain lifetime employment policies. When including companies that assume that a partial correction is unavoidable but that will basically maintain lifetime employment, nearly 90 % of companies indicated that they will maintain lifetime employment policies. This result indicates that the effect will be limited to the extent that the sorting effect will become ineffective even if Japanese companies introduce the performance-based pay system. Rather, it may cause an adverse effect on the company's

[8] The research above was done by mail in October, 2005. Moreover, to understand the shareholder's influence, all listed 2531 companies (the first and second section of the Tokyo Stock Exchange, the first section and second of the Osaka Stock Exchange, the first and second section of the Nagoya Stock Exchange) were targeted in the research. The number of effectively collected responses was 450 companies (effective rate of collection was 17.8%). Response rates were 16.9% with companies with less than 300 employees, 33.3% with 300 to 999, 36.2% with 1000 to 4999, and 11.8% with more than 5000, respectively. Moreover, among companies that responded, 48.2% were manufacturing companies, and 49.9% were non-manufacturing companies.

profit to the extent that worker's dissatisfaction will rise.

Table 2. Policy about the life-time employment henceforth

Number of surveys	Continue to apply the life-time employment in principle	Partial change is indispensable	Basic review is necessary	Lifetime employment policy has never been in place	No answer
451	258	119	28	29	17
(100.0%)	(57.2%)	(26.4%)	(6.2%)	(6.4%)	(3.8%)

Source: *Survey on the Corporate Governance of Companies and CRS* (The Japan Institute for Labor policy and Training, Research Section, 2006).

Objective assessment vs. subjective assessment

One of points under discussion in criticism of the performance-based pay system is that it is difficult to recognize workers' performance objectively, so that it is not possible to treat workers according to their performance. Apart from workers such as salespeople whose sales figures can be easily observed and whose performance index can be easily verified by a third person, it is clearly difficult for many workers to acquire a performance index. Therefore, the point that an objective performance index cannot be obtained is a weakness in the performance-based reward system.

Even if an objective performance index was acquired, a worker's incentive does not necessarily improve, and the reward system that maximizes the profit of a company is not necessarily established. Baker, Gibbons and Murphy (1994) provide the following good example: The manager in charge of a district of a certain company is provided a bonus only when the earnings of the same district expand more than that of the previous year. The manager manipulates delivery dates to clients in order to secure profit growth, ultimately resulting in a negative effect on the company. At the same time, in an example of a company that introduced a system in which part of the earnings of a car repairman were set as a percentage of car repairs, the repairman frequently convinced clients to order needless repairs, so that the repair factory had to be closed depending on the administrative guidance. Basically, even if an objective performance index is acquired, the wrong incentive may be given to workers.

In a certain private job placement company in Japan, sales are used as part of the assessment index for employees who are in charge of the recruiting

companies and the number of job introductions is used for employees who are in charge of the job seekers. In the context of using such different assessment indices, the idea is to give the person in charge of the recruitment an incentive to find high quality job seekers and to give the person in charge of the job seekers an incentive to improve the quality of job matches. If the assessment index for the person in charge of the recruiting companies was the number of the job introductions, the company would introduce jobs without thinking about the content of the job opportunity. As a result, companies able to get potential employees would decline, which would not profit the company. Moreover, if the assessment index of the person in charge of job seekers was sales, the person in charge might introduce only positions with a high annual salary without thinking about the quality of the match with the job seeker. When this matching is poor, the job seeker will leave the company a short period after he/she is employed and the job placement company can not request a commission for introducing an applicant to the recruiting company, which means a possible decrease in the profits of the company. So this job placement company devised a method so as not to give the wrong incentive to their workers, by changing the assessment index according to the work category.

Lazear (1989) argued that it is more efficient to give a weak incentive to the worker in a dysfunctional incentive reward system. He extended the Tournament Model by Lazear and Rosen (1981) and showed that, in a model of a tournament with a generous reward , some workers increased their effort level to remains in the tournament, while other workers were idle during much of the same period. Therefore, he argued that it is efficient to make the prize of the tournament less the sum of idle work.

Moreover, in general the work that a worker is doing often consists of two or more activities. Let's assume that one activity is associated with the performance index of the individual, but other activities are not associated with that at all. In this case, the worker may give priority to the activity that is associated with their individual performance index, and might come to neglect the remaining activities. The multitasking problem which Holmstrom and Milgrom (1991) pointed out is exactly such a problem. This multitasking problem is also said to occur in Japanese companies that introduced the performance-based pay system. According to the author's research, among consumer electronics dealers who introduced to the management staff a reward system that was

synchronized with the numbers of sales, it was not uncommon for the management staff to prioritize sales to the extent that it had a detrimental effect on management of subordinates. Above all, it was impossible to give education and training opportunities to subordinates. Now this company is trying to introduce the education of subordinates as the assessment index for the management staff.

With the so-called performance-based pay system in Japanese companies, in many cases, an objective performance index is not necessarily used (of course, there may be exceptions). A variety of assessment indices such as a job index or a role index seemed to be used, but in any case a subjective assessment strongly influences the personnel assessment. Rather, many companies use a subjective assessment. The purpose management system is one of the important systems that support the assessments in the performance-based pay system, but the subjectivity of evaluators strongly influences the assessment. Even if assessment training is done, the assessment is still significantly subjective. There are many arguments that say that the performance-based pay system does not work, but subjective assessments are not thought to be wrong in recent studies of the economics of human affairs.

The work achievements of workers often consist of two or more action processes. Processing such an action well influences the overall performance, but it is hard for a third person to personally observe the process itself, and therefore it is also impossible to assess this objectively. However, supervisors and colleagues in the office often subjectively understand the quality of the action process of the worker and furthermore understand their contribution to the company. Through the company's assessment based on such an understood reputation, the company and the worker can cooperate and accept the profits with each other.

3. Background to the Introduction of the Performance-based Pay System

Japanese companies, especially large companies, have greatly reviewed their personnel strategies since the latter half of the 1990s. A variety of personnel system reforms have been carried out such as positively adopting various systems of employment, reviewing the employment management that centered on the regular employees and adopting so-called performance-based pay system, and reviewing the reward system based on years of service. What is the background to this review of such personnel strategies in Japanese companies?

Did increasing labor management costs have an influence?

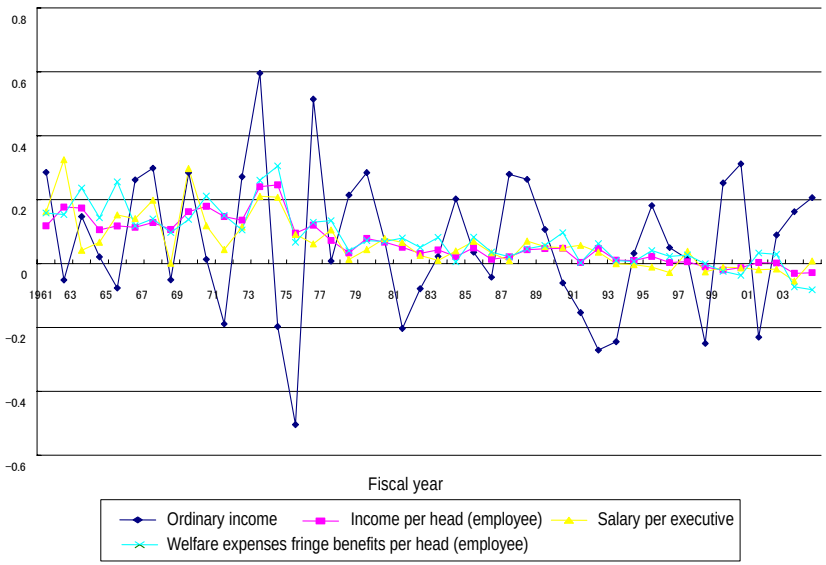
The collapse of the bubble economy and the subsequent long-term economic slowdown was often indicated as a reason. Increasingly severe international competition due to globalization is also often mentioned. Furthermore, another reason is that Japan's rapidly aging population also led to the rapid aging of the companies' personnel structures. Other factors can be pointed out, but the most important factor is the increase in the labor management costs. A rise of personnel expenses became a large problem in corporate management.

Certainly, there was a structural mechanism in the work performance qualification system that was adopted by a lot of companies so far wherein the treatment level increased by years of service inside the income management system. Labor management costs have risen as the average age of the workers rose. However, the authors question if it is rash to think that only the rise of labor management cost is a factor in the personnel strategy review of recent years.

The reason for this is that labor management costs ought to have pressed the corporate management several times in the past. In Figure 5 each increased rate over the preceding year is plotted for ordinary income, the salary per head and welfare expenses fringe benefit from the 'Financial Statement Statistics of Corporations' of the Ministry of Finance Japan (investigation each year). The salary per head and the welfare expenses fringe benefit per head had consistently shown a positive growth rate until the latter half of 90's and had a growth rate of 10% or more over the preceding year in the 60's and 70's. On the other hand, the growth rate over the preceding year in ordinary income was about 10% on the average in 60's and 70's with a negative growth rate in some years. Especially in 1974 and 1975, a decrease in ordinary income (negative 20% and negative 50%) appeared. Additionally, the ordinary income rate was also negative several times over the preceding year after the latter half of the 80's, too, which was the first time this happened in recent years.

Then, did reasons other than the increase in labor management costs influence the strengthening review of the personnel strategies in each company in recent years? What are the real reasons? The reasons that this paper focuses on are the technological innovation in the white-collar office including ICT (information and communications technology) showing the eminent advancement of recent years and the change in the corporate governance structure.

Figure 5. Increase rate over the preceding year for ordinary income, the salary per head and welfare expenses fringe benefits



Influence of technological innovation[9]

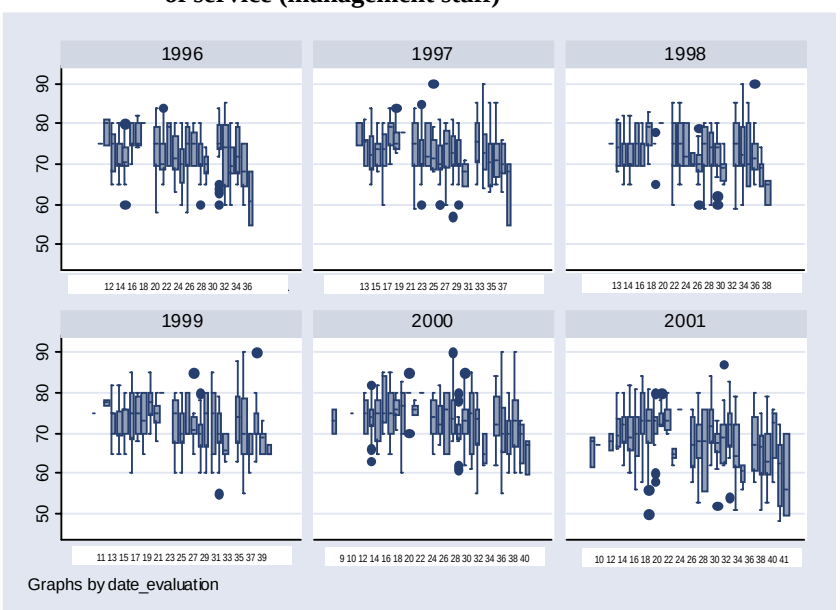
The sales of the FA department etc. occupied 70 % of all sales in early 90's in the trading company mentioned above, but the sales of electronic devices and information and communication devices reached 70-80 % of all sales around 2000. As the business environment for the trading company greatly changed, the skill elements concerning sales for the salesperson changed greatly. In the construction, environment, and FA system sections long-term deals were effective, and a salesperson's personality, intuition and knack were the main elements in doing business. However, as the electronic devices and the information and communication devices became the main target in doing business, Internet dealing became the main method for deals. The salesperson's personality, intuition and knack were not always necessary. Instead, issue-solution type and proposal type business—whereby a total solution is offered to the client—has become the mainstay. In actual fact, at the trading company mentioned in the example above, salespeople in their late forties to fifties had

9 Refer to Chapter 6 of Tsuru, Abe, and Kubo (2005) for details of this part.

been worried about the effect of this environmental change. They recently faced a problem in that they could no longer make sales of products for which they had relied on their personality and experience to sell.

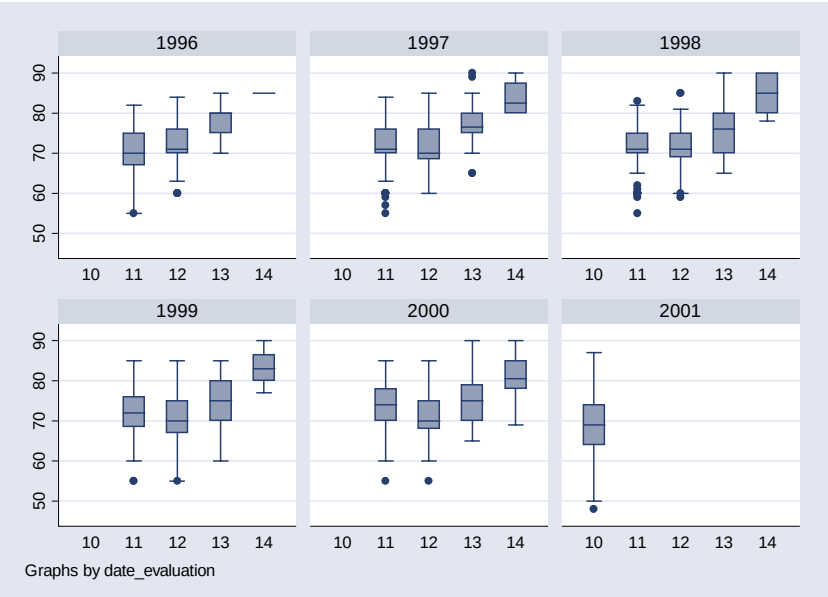
Figure 6 shows the distribution of the evaluation score according to years of service. The fluctuation of the evaluation score has expanded from 1996 before the reform of the personnel system until 2001 after those reforms. When looking at qualification, the average of the evaluation score did not necessarily rise between 1997 and 1999 regardless of the level of administrative qualification (number 10 in the figure shows a high level while number 14 indicates a low level), and it remained at the same level (Figure 7). At those periods in 2000 when the work performance qualification system was carried out, the average evaluation score was lower in number 12 than in number 11 for the lower qualification. This means that as a consequence of managing the work performance qualification system according to years of service, the qualification of the person had to be raised due to his/her years of service and age, the result

Figure 6. Distribution of the evaluation score according to years of service (management staff)



Source: Revised from the personnel data from a certain trading company.

Figure 7. Distribution of the evaluation score according to qualification (management staff)

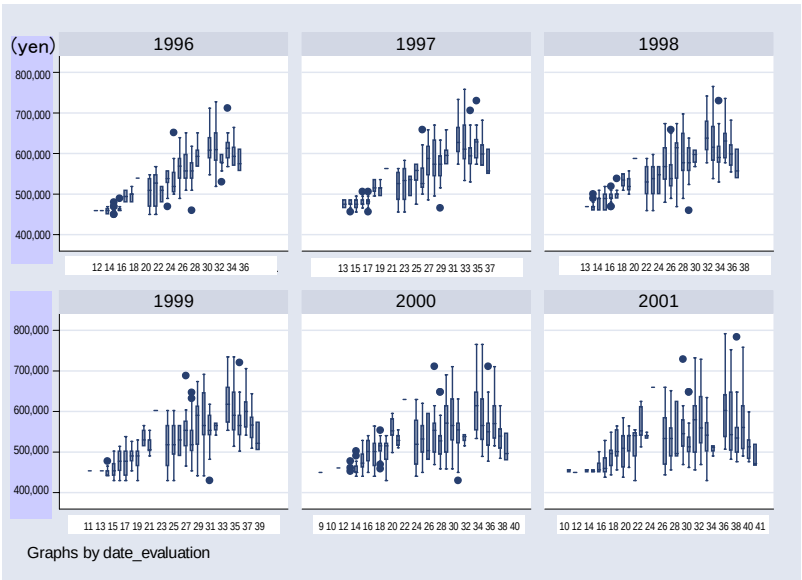


Source: Revised from the personnel data from a certain trading company.

did not go up so much as it leveled up, and sufficient performance was not attained. The person for whom the qualification could not be leveled up was also leveled up before the reform of the personnel system. Consequently, years of service could not be used as the ability index.

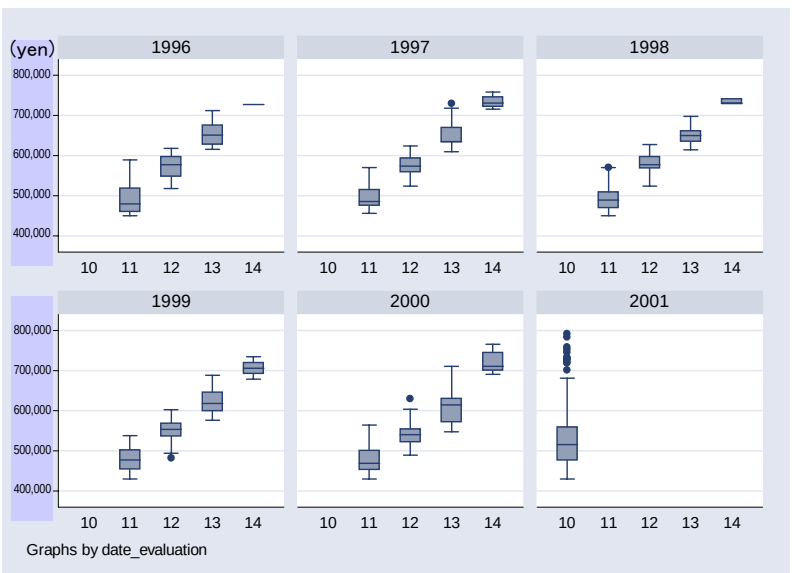
On the other hand, as is shown in Figure 8 and Figure 9, the correlation between the evaluation score and years of service has weakened, but income has kept a strong correlation with years of service. That is to say, some persons were receiving too much income. The gap between ability and salary had expanded before the reform of the personnel system as the consequence of the decision of the qualification according to years of service. In particular, when Figure 7 and Figure 9 are compared, the correlation between the qualification and the wage is very high in Figure 9. If the qualification goes up, the income goes up, but there is no such relation between the evaluation score and the income. That is, there are many workers whose evaluation is low but whose income is high (In particular, workers of number 12 and 13 are problematic).

Figure 8. Distribution of the monthly pay according to years of service



Source: Revised from the personnel data from a certain trading company.

Figure 9. Distribution of monthly pay according to qualifications



Source: Revised from the personnel data from a certain trading company.

Table 3 shows the corresponding relation between the rating in the old work performance qualification system and the rating in the new role grade system in the year of 2000. The vertical axis represents the work performance qualification (from number 11 to 14, a large number means a high qualification) in the old system and the horizontal axis represents the role grade (from number 1 to 5, a large number means a high grade) in the new personnel system. For instance, person number 13 in the old work performance qualification system corresponds to number 3 in the new role grade system, but actually also corresponds to numbers 1 and 2 in the new role grade system. Put simply, originally there were only 40 out of 63 people who should be ranked number 3 and number 4. The remaining 23 people were ranked lower. However, because the work performance qualification system had been applied according to years of service, the right result was not found.

Table 3. Rating situation in the work performance qualification system and the rating situation in the role grade system

		Role grade					
		1	2	3	4	5	Total
Work performance qualification	11	91	61	1	0	0	153
	12	50	51	8	5	0	114
	13	5	18	24	16	0	63
	14	0	0	0	7	5	12
	Total	146	130	33	28	5	342

Numerical value in the table is the real number.

Next, looking at Table 4 (dummy 0 of the evaluation score means the persons rated low at the transition period from the old system to the new system, dummy 2 means the persons rated high, and dummy 1 means the persons rated standard), persons (0) rated at the subordinate position were similarly rated low in the old system, compared with the persons (1 or 2) rated at the standard and upper position. Therefore, the persons rated low in the new system were also rated low in the old system (from 1996 to 2000). Likewise, the persons' rated standard still remained in the middle. The persons rated high (2) were also high in the rank in the old system.

However, looking at the average wage, it is 545,164 yen for the person (0) of the low rank in 1996 and is 529,369 yen for the person (1) of the standard rank. In other words, the income of the person whose evaluation score is lower

Table 4. Average evaluation score and monthly wage by ranking in the role grade system

Average evaluation score by ranking

	dummy			
	0	1	2	Total
1996	67.42	73.80	79.48	72.51
	5.03	4.46	2.70	5.95
	85	146	35	266
1997	68.12	74.15	80.14	73.06
	4.61	4.57	4.44	5.93
	85	157	35	277
1998	68.02	74.02	80.85	73.10
	4.61	4.65	4.62	6.03
	86	179	35	300
1999	66.41	73.51	81.20	72.45
	4.61	4.66	3.81	6.29
	86	200	35	321
2000	67.54	74.33	80.77	73.26
	4.77	4.45	4.37	5.93
	87	220	35	342
2001	63.18	69.71	73.37	68.48
	6.22	6.51	4.87	7.05
	87	237	35	359
Total	66.77	73.08	79.30	72.04
	5.27	5.31	4.96	6.48
	516	1139	210	1865

Average monthly income by ranking

	dummy			
	0	1	2	Total
1996	545164.71	529369.86	614457.14	545612.78
	51047.09	60092.68	70830.51	64938.26
	85	146	35	266
1997	550188.24	540509.55	638685.71	555884.48
	49710.94	59788.47	69456.61	66187.10
	85	157	35	277
1998	550883.72	542949.72	656000.00	558413.33
	49082.50	63117.26	66691.56	69544.64
	86	179	35	300
1999	522465.12	522075.00	647685.71	535875.39
	45333.97	62270.35	57218.24	69569.09
	86	200	35	321
2000	505436.78	522186.36	661971.43	532230.99
	33825.37	55420.32	54338.52	67316.05
	87	220	35	342
2001	493379.31	522466.57	678600.00	530639.49
	24443.69	53846.96	55952.29	69815.27
	87	237	35	359
Total	527732.56	528934.66	649566.67	542185.30
	48647.79	59320.29	65172.55	68866.72
	516	1139	210	1865

Numerical value in the table is Average, Standard Deviation, and Number of observation in order from the top.

and whose rank is lower than an average person is high in the old system, which continued until 1999. This reversal collapsed after 2000, and the wage of the person (0) of the low rank became lower than that of the person of the standard rank (1).

Basically, there were also some persons with low ability among those persons who were working for many years and who received a high qualification at the time when the work performance qualification system was applied. These persons received a high income on the work performance qualification system. However, in contrast to these persons, others received a low qualification because of their few years of service despite their high performance, and received a low income on the work performance qualification system.

Why have these situations occurred? The business environment changed suddenly, as mentioned above, and the employees were asked to create added value. Ability has risen together with years of service in the business at the trading company where personality, intuition, and knack had been important, but the correlation between years of service and ability has been weakened by technological innovation. After 1996, a reversal of ability and wage came to be observed.

Connections with change in the corporate governance structure[10]

Companies have also faced the reform of the corporate governance structure based on the changes in the business environment because of economic globalization. The opinions of institutional investors and individual investors became more influential, the composition of shareholders changed and a trend emphasizing stakeholders (persons concerned) also became intense. At the same time, the changes in corporate governance considerably influenced personnel strategy.

According to Aoki (2001), Abe and Hoshi (2006), and Hoshi (2002) there seems to be a supplementary relationship between business finance, corporate governance, and personnel strategy. However, research that proves and analyzes such a relationship has not advanced much because of a lack of date, etc. In the following, we will examine what kind of change the corporate governance

[10] Refer to the Japan Institute for Labour Policy and Training (2006) for details of this part.

structure gave to personnel strategy, especially the wage system, by using the "Survey on the corporate governance of companies and CRS" (hereafter, referred to as Research), which was carried out by the Research Section of the Japan Institute for Labor Policy and Training.

The concrete analysis was performed as follows: The existence of a personnel and labor management system at each company was obtained in the question 13 of Research (Table 5 is the basic statistics). Here a variable was created where one is when the system is completely applied and zero otherwise, and this was assumed to be a dependent variable. Question 13 investigates the presence of 16 systems in total, but here only the system that is related with the

Table 5. Situation regarding the introduction of the personnel and labor management system

	Number of surveys	Under enforcement	Under examination	No plan	No answer
(1) Work performance qualification system	451 (100.0%)	339 (75.2%)	19 (4.2%)	78 (17.3%)	15 (3.3%)
(2) System that reflects the individual performance to the monthly wage	451 (100.0%)	264 (58.5%)	38 (8.4%)	135 (29.9%)	14 (3.1%)
(3) System that reflects the sector's performance to the monthly wage	451 (100.0%)	74 (16.4%)	56 (12.4%)	307 (68.1%)	14 (3.1%)
(4) System that reflects the performance of the whole company to the monthly wage	451 (100.0%)	79 (17.5%)	56 (12.4%)	300 (66.5%)	16 (3.5%)
(5) Flexible working hours system	451 (100.0%)	105 (23.3%)	118 (26.2%)	207 (45.9%)	21 (4.7%)
(6) Management by objectives	451 (100.0%)	356 (78.9%)	51 (11.3%)	29 (6.4%)	15 (3.3%)
(7) Training for examiners	451 (100.0%)	291 (64.5%)	96 (21.3%)	50 (11.1%)	14 (3.1%)
(8) Trouble-shooting system for evaluation	451 (100.0%)	167 (37.0%)	107 (23.7%)	159 (35.3%)	18 (4.0%)
(9) In-office public offering system, self report system	451 (100.0%)	282 (62.5%)	75 (16.6%)	78 (17.3%)	16 (3.5%)

reward system is analyzed. In addition, by using the attributes which were obtained through research, the following dummies and conditions are collated: Attribute dummy of tops of companies that is composed of owner type, trueborn type and type of retiring high-ranking officials landing a private corporation (in this case, the trueborn type is assumed to be the reference); Share possession rate according to the attribute of shareholders that consist of top ten shareholders, financial institutions, brokerage firms, individuals and foreigners (in this case, the individual share possession rate is assumed to be the reference.); Experience of the operation crisis; Industry dummy; Company scale dummy. Each of them is assumed to be an explanatory variable.

The estimated result is shown in Table 6. Firstly, when the work performance qualification system was set to the dependent variable, only estimated coefficients of the share possession rate of the brokerage firm became a statistically significant negative value. The reason why the share possession rate of the brokerage firm gives a negative influence is not certain, but this influence is not seen elsewhere in companies' tops and shareholder attributes. Simply put, "(1) the work performance qualification system" is a general practice except with brokerage firms with a high share possession rate.

Next, the "share possession rate of foreigners" was presumed to be a statistically significant positive value when "(2) system that reflects the individual performance to the monthly wage" was set to the dependent variable. This result suggests that the higher companies share possession rate by foreign shareholders, the more they introduced the so-called performance-based pay system. Except for this, there was no influence by companies' tops and shareholder attributes. It is found that companies where there was an "operation crisis" in the past introduced the "(3) system that reflects the sector's performance to the monthly wage" at the high rate. Moreover, the significant coefficient was not statistically presumed as for the "(4) system that reflects the performance of the whole company to the monthly wage," and neither top nor the shareholder attribute had any influence.

Thus there is a tendency for the so-called performance-based reward system, where the individual's achievement is reflected in the monthly wage, to be introduced in the companies with a high share possession rate by foreigners. Many foreign shareholders are in investment trusts and funds, but they are strongly apt to make much of ROA (return on investment) and ROE (return on

Table 6. Influence of the corporate governance on the personnel and labor management system

	(1) Work performance qualification system	(2) System that reflects the individual performance to the monthly wage	(3) System that reflects the sector's performance to the monthly wage	(4) System that reflects the performance of the whole company to the monthly wage	(5) Flexible working hours system	(6) Management by objectives	(7) Training for examiners	(8) Trouble-shooting system for evaluation	(9) In-office public offering system, self report system
Owner type	-0.061 (0.057)	0.058 (0.065)	0.054 (0.054)	0.003 (0.055)	-0.064 (0.055)	-0.070 (0.051)	-0.031 (0.063)	-0.150 (0.063)**	-0.084 (0.066)
Type of retiring high-ranking officials landing a private corporation	0.009 (0.076)	-0.012 (0. 099)	-0.016 (0.069)	0.108 (0.091)	0.047 (0.087)	0.057 (0.060)	0.130 (0.079)	0.019 (0.100)	0.034 (0.092)
Share possession rate of top ten shareholders	-0.232 (0.180)	0.229 (0.229)	0.276 (0.170)	0.160 (0.187)	0.237 (0.203)	-0.258 (0.162)	-0.232 (0.210)	0.068 (0.231)	-0.237 (0.219)
Share possession rate of the financial institution	-0.004 (0.193)	0.242 (0.253)	0.155 (0.184)	-0.151 (0.208)	0.259 (0.220)	0.373 (0.192)*	0.605 (0.243)**	0.670 (0.255)***	0.723 (0.251)***
Share possession rate of the brokerage firm	-2.373 (1.244)*	0.649 (1.578)	1.032 (1.165)	-0.348 (1.526)	-1.132 (1.747)	-0.926 (1.115)	-1.634 (1.478)	-1.237 (1.700)	-1.975 (1.484)
Share possession rate of foreign shareholders	-0.332 (0.228)	0.948 (0.315)***	0.222 (0.226)	0.258 (0.237)	0.458 (0.256)*	0.067 (0.226)	0.171 (0.289)	0.154 (0.310)	0.451 (0.298)
Existence of operation crisis	-0.069 (0.048)	0.032 (0.058)	0.111 (0.046)**	0.061 (0.048)	0.067 (0.052)	0.051 (0.042)	0.071 (0.054)	0.101 (0.059)*	0.058 (0.055)
Number of observation	358	356	351	340	343	350	345	347	355

Standard error in parenthesis.
*, ** and *** means that coefficients are statistically significant at 10%, 5% and 1% respectively.

equity), and they tend to seek the short-term gain for company managers. Moreover, their "voice" is so strong that company managers cannot disregard it. It is thought that such stakeholders' existence promotes the efficient management of companies, resulting in the personnel strategy with the performance-based pay system, too.[11]

Looking at personnel and labor management system other than the reward system, this result shows that "(5) flexible working hours system" is introduced by the companies with a higher share possession rate by foreign shareholders. The flexible working hour system is a kind of "discretionary work time system." Where it is necessary to entrust the concrete implementation method to workers' discretion because of nature of the business, and when workers cannot be familiar with the employer's concrete control and supervision and calculation of labor time based on the ordinary method is inappropriate, certain hours are considered to be labor hours after making an agreement between labor and management. Such a form of employment system and working hour system is called the "discretionary work time system."

The flexible working hours system has two types: the "flexible working hours system of special business type" and "flexible working hours system of planning business type." There, workers get evaluated by attaining the purpose, in that sense, it is different from the concept of paying the income to "working hour", and is the working hours system to consider the value and treatment to "performance." The result of the flexible working hours system introduced in the companies with the high share possession rate of foreign shareholders is thought to have a supplementary relation with the consequence that the performance-based pay system is adopted in the companies with the high share possession rate of foreign shareholders.

However, the share possession rate of foreign shareholders do not produce a statistically significant influence on "(6) management by objectives," "(7) training for examiners," "complaint processing system to the (8) trouble-shooting system for evaluation" or "(9) in-office public offering system, self report system." It is the share possession rate of the financial institution to influence these systems, and these systems are introduced by the financial institutions of

[11] Whereas Tirole (2001), Hoshi (2002), and Abe and Hoshi (2007) theoretically discussed the corporate governance and the complementarity of the personnel strategy.

higher share possession rate.[12] It is thought that these systems are in the relation that supplements the application of the performance-based pay system, but it might lack the balance in the application of the personnel system that these systems do not exist in the companies with higher share possession rate of foreigners that strongly tend to have the performance-based reward system.

"The target setting is not performed well," "an appropriate assessment is not applied," "there is dissatisfaction about the evaluation," or "there is dissatisfaction about the assignment and destination of arrangement" etc: Persons who hold the opinion that the performance-based reward system does not suit Japanese companies often voice such complaints. However, the reward system itself is not the problem, but rather the fact that the system supporting it is unfinished may be instead be the problem.

4. Conclusions—Debating the Performance-based Income System vs. the Work Performance Qualification System is Nonsense

Various problems have been pointed out in the performance-based reward system, which was actively introduced in Japanese companies since the latter half of the 90's.

In particular, many believe that neither the achievement nor the productivity of the companies rises even if the performance-based pay system is introduced, nor should we return to the traditional system because the performance-based pay system does not suit the Japanese.

However both performance-based pay system and traditional work performance qualification system have their own problems. It is difficult to decide which one is effective because they are affected by the labor market of each age and by the climate of business management.

Moreover, neither the achievement nor the productivity of companies necessarily increases even if the performance-based pay system is introduced. The workers can be committed to the company's objections and this can improve their motivation, by which they influence productivity and achievement. So they cannot improve the motivation and be committed to the corporate target, just by changing the system. Some mechanism is necessary in addition

[12] As for "Complaint processing system to the assessment" when the management top is the "owner type," it has a negative influence and when "(in the past) there was the operation crisis" it has a positive influence.

to the reward system.

This paper explained the theory of the optimum reward system taken up in the economics of human affairs, pointed out might cause the moral hazard problem in the work performance qualification system, and at the same time discussed about the problems of the "real" performance-based reward system. Anyway both are not complete systems in the meaning that they are not the First Best reward system.

However, what brought about the situation whereby Japanese companies worked on the personnel system reform after the 1990s, and the performance-based pay system was introduced? In this paper, the focus was applied to not labor cost, as is often pointed out, but to the technological innovation and the influence by the change in the corporate governance. The author insisted that the business environment's of companies changed by the technological innovation and the change of the corporate governance, and at the same time as aging of the employees advanced number of companies which try to apply the performance-based pay system increased. Regardless, there may have been few companies that launched personnel system reform for the positive reason that the meritocracy had failed there. Whether the work performance grade or the role grade is applied, there are few companies which apply personnel assessment only by the objective performance index in the Japanese performance-based pay system. In relation to this, there is also the criticism that the performance-based pay system does not work well since the performance index are not sufficiently prepared, but the author thinks that the performance-based pay system work well even by the subjective index. Rather, the author intuitively thinks the fact that workers are aware of the introduction of the performance-based pay system would lead to the system becoming an incentive to them.

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A Behavioral Economic Approach to Performance-based Wage Systems

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1. Introduction

With the burst of the bubble economy and prolonged recession that followed in Japan, the way in which various features of the Japanese-style management—features that had been praised as supporting Japan's economic growth—were appraised drastically changed; subsequently, a need arose to reform those features in response to changes in the business environment in which firms were placed. In this context, a review of seniority wage systems and other reward systems began, and many firms started to introduce performance-based wage systems in which the amount of a worker's remuneration was determined based on the worker's performance. Although the operation of these systems seems to be simple, in practice they have not functioned very well. Furthermore, recently problems with these systems have often been pointed out.[1]

The objective of this paper is to analyze performance-based wage systems from the perspective of contract theory. In addition, we focus on the effects that incentives have on the psychological aspects of agents. This is based on principal-agent models that incorporate the fruits of behavioral economics, which has made remarkable progress in recent years. The viewpoints of behavioral economics are important because introduction of the performance-based wage system not only acts as an incentive for workers, but it may also have a psychological effect on workers. This effect is considered as one of the reasons for the gap between the intended effects of performance-based wage systems of firms and the actual effects.

For example, because wages are linked to performance in the performance-based wage system, a wage gap will be generated among workers in the same workplace. As a result, the wage gap may have an effect on the motivation of workers, and the performance-based wage system may work in a different direction from what the firm first intended. There is also the issue of the difficulty of assessing performance as a basis of determining remuneration. It is not difficult to imagine that the same performance is evaluated differently

[1] See, for example, Jo (2004) and Takahashi (2004).

depending on who the assessor and the assessed are. In this case, it is possible that the gap in evaluation may have an effect on workers' motivation. Therefore, introduction of a performance-based wage system not only functions as a direct incentive for workers, but it may also have a psychological effect on workers; this generates a gap between the intended effect of introducing the system and the actual outcomes.

For these reasons, a more meaningful analysis of performance-based wage systems is possible by considering not only the direct effects of remuneration as an incentive, but also its psychological effects on agents. Therefore, in this paper we use a number of simple models and discuss the differences that emerge when considering the psychological effects of such incentives, in comparison with results obtained from standard models.[2]

The contents of this paper are as follows. In Section 2, we consider the situation where an agent's utility depends not only on the agent's own remuneration, but also on the remuneration of others. For this purpose, we explain the term, "social preferences," as defined by Fehr and Schmidt (1999). We then analyze a moral hazard model that incorporates social preferences, examine what effects the consideration of social preferences have on optimum reward systems, and study how the degree of dependence of remuneration on performance is determined based on the degree of social preferences and the difficulty of a project. If it can be understood that the widening of the wage gap means the expansion of performance-based pay, we would then be able to point out from the results in which situations performance-based pay is favorable.

In Section 3, we use a simple model to explain the "crowding-out effects" of motivation by incentives, as proposed by Frey (1997) and others. The crowding-out effects are a psychological concept based on a theory concerning the relation between external monetary rewards and intrinsic motivation, and they are also used by Takahashi (2004) as grounds for criticizing performance-based pay. In this section, therefore, we define the crowding-out effects and confirm, by presenting Frey (1997)'s model, that when these crowding-out

[2] For this reason, we do away with details in the models described in the following sections, at the risk of sacrificing rigorousness to a certain degree, in order to provide plain descriptions as much as possible. In each model, however, we list references of more detailed analyses, to which readers interested in more rigorous discussions can refer.

effects exist, they give rise to the possibility that performance-based incentives may be unfavorable. Lastly, in Section 4, we consider the psychological utility associated with the issue of delegation of responsibilities, and compare fixed wage contracts and pay-for-performance contracts. In reality, it may be difficult to judge whether performance-based reward systems are generally good or bad. Empirical studies in the field of labor economics, however, have shown a number of necessary conditions for performance-based pay to function effectively. Delegation of responsibilities is sometimes mentioned as one of them. It has been indicated that when a performance-based wage system is accompanied by the delegation of responsibilities and when assessment is done fairly (in the respect that when an agent succeeds in enhancing performance because he has been delegated responsibilities, the enhanced performance is reflected in the agent's remuneration), the performance-based wage system is more favorable than fixed wage contracts.

2. Performance-based Pay and the Wage Gap

Performance-based wage systems may differ widely in detail depending on the firms introducing those systems. Okunishi (2001), however, gave the following three points as principle features common to all performance-based wage systems:

(i) Results, more than processes, are emphasized as a wage-determining factor.
(ii) Short-term results, more than long-term results, are emphasized.
(iii) They widen the wage gap.

As Okunishi (2001) points out in relation to the third point above that widening of the wage gap may be interpreted as an expansion of performance-based pay, it is important that wages for good and bad performances are widely differentiated in a performance-based wage system. This is so that the differences act on workers as incentives and performance-based wage systems function effectively. Therefore, the question in introducing a performance-based wage system is whether a reward system as an incentive mechanism that widens the wage gap is actually favorable for firms.

This question, however, is based on the assumption that remuneration only has a monetary effect on workers. It should be noted that wage gaps created in a performance-based wage system may have other effects on a worker's utility. In other words, it is important to consider that a worker is interested not only

in the amount of wages he receives, but also in the amount of his wages relative to those of another worker (a colleague in the same workplace, for example). Fehr and Schmidt (1999, 2003) conceived a utility function that reflects not only pecuniary benefits considered in standard economic models, but also the amount of others' gains; economic subjects with such a utility function are called economic subjects with social preferences, and their effect is analyzed.

In this section, we analyze a moral hazard model with limited liability constraints in which types of social preferences are incorporated into the utility function of agents. Through this analysis, we see how reward systems as an incentive mechanism will be when social preferences are taken into account. As a result, the optimum reward system is determined based on such parameters as the probability of a project's success and degree of social preferences; therefore, we consider the question of in which situations there should or should not be a wage gap, in other words, in which situations performance-based wage systems will be more favorable.

We first consider a standard model.[3] We think of a case where there is a risk-neutral principal and agent. The agent carries out a project, and wage is paid depending on the results. The agent carries out the project at an effort level e, and the output x is generated as a result. Here, we suppose that the agent's effort level is either high or low, and the outcome is either a success (x_s) or failure (x_f). The cost of effort borne by the agent is $d > 0$ when the effort level is high and 0 when the effort level is low. The outputs are $x_s = x > 0$, $x_f = 0$. Obviously, it is considered that the higher the effort level, the higher the probability of success. More specifically, when the agent's effort level is high, the probability of success is p_1, and when it is low, the probability of success is p_0, where $0 < p_0 < p_1 < 1$. The principal cannot monitor the agent's effort level, and therefore the wage is dependent on the outcome. As the simplest form of performance-based wage, wage w_s is paid when a project is successful, and wage w_f is paid when a project fails. For the sake of simplicity, it is assumed that $w_s = w \geq 0$, $w_f = 0$.

In this case, let us analyze what wage w the principal will offer to the agent. The agent's utility is defined as wage minus the cost of effort. On the other

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[3] For more details on contract theory, see Itoh (2003). The model in this section is based, in particular, on the model of limited liability constraints in chapter 5.1.

hand, the principal's utility is the project's output minus the wage. Assume that x is now sufficiently large, and the principal hopes that the agent's effort level is high. In this case, the principal needs to choose from w that meets the conditions shown below and that will minimize her expected payment.[4]

$$p_1 w - d \geq p_0 w, \quad \text{(IC)}$$
$$p_1 w - d \geq 0, \quad \text{(IR)}$$
$$w \geq 0 \quad \text{(LL)}$$

The left side of (IC) is the agent's expected utility when his effort level is high, and the right side is the expected utility when the effort level is low. Therefore, (IC) is a condition for the agent to choose a high effort level over a low effort level (incentive compatibility constraint). (IR) is the condition for the agent to agree to this contract when the reservation utility the agent gains by utilizing an external opportunity rather than accept the contract is zero (individual rationality constraint). Lastly, (LL) is the limited liability constraint where a contract in which the agent's wage becomes negative cannot be enforced.

The analysis of this case is easy. If we sort out (IC), we obtain the condition $w \geq d/\Delta p$, where $\Delta p \equiv p_1 - p_0$. Considering that the principal hopes to minimize w as much as possible and that $w = d/\Delta p$ always satisfies (IR), the optimum wage in this case is $w^* = d/\Delta p$ (> 0).

We next discuss a model in which the social preferences of agents are incorporated in the above model. To consider the comparison of wages between agents, assume now that there are two agents. To make our analysis simple, the two agents are homogenous; there is no correlation between their productions, and the two are independently engaged in their projects and are individually paid wages in accordance with their outputs.[5]

Here, we formulate social preferences in accordance with Fehr and Schmidt (1999). In doing so we consider, as an item in the agent's utility function in addition to wage and the cost of effort, the utility S gained when comparing one's own wage (w) with another's (colleague's) wage ($\overline{w}$), as shown below.[6]

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[4] In accordance with the custom in this field, the principal is hereafter called "she" and the agent, "he."

[5] Itoh (2004) analyzes a case where wage is determined in accordance with each agent's output and what features the optimum contracts would have depending on social preferences.

[6] For the purpose of this paper, we call the utility that is considered additionally when a psychological factor such as S is included the "psychological utility."

$$w \geq \frac{d}{\Delta_p} \cdot \frac{1}{1+\alpha\{p_1-\lambda(1-p_1)\}}, \qquad \text{(ICS')}$$

$$w \geq \frac{d}{p_1} \cdot \frac{1}{1-\alpha(1-p_1)(1+\lambda)}. \qquad \text{(IRS')}$$

The question here is the relation between the right sides of (ICS') and (IRS'). When α is smaller than a certain value, the right side of (ICS') is greater than the right side of (IRS').[8] Here, as in the case where social preferences are not considered, we focus on the case where the incentive compatibility constraint is effective. In this case, the optimum wage, which is determined where (ICS') takes a sign of equality, is as follows:

$$w^{**} = \frac{d}{\Delta_p} \cdot \frac{1}{1+\alpha\{p_1-\lambda(1-p_1)\}}$$

When w^{**} and w^{*} are compared, the relation of their magnitude depends on the values of p_1 and λ. If $\lambda < p_1/(1-p_1)$, then $w^{**} < w^{*}$. In other words, if we were to consider social preferences, the performance-based wage should be lowered instead to weaken the incentive. In particular, this relation always holds when $\lambda < 0$ or $1/2 < p_1$. When $\lambda < 0$, in other words, when the agent is averse to his own wage being smaller than that of his colleague's and rather prefers that his own wage be higher, it is better to lower the performance-based wage. This is because the preference of this type of agent to succeed regardless of the results of his colleague directs the agent to choose a high effort level. Moreover, if the principal were to consider this point, the agent would select a high effort level even when the wage provided as an incentive is low. When $1/2 < p_1$, in other words, when there is a high probability of a project's success as long as an effort is made, there is an increased possibility that if the agent were to choose a low effort level he alone would fail and receive no wage even though his colleague would succeed and receive a wage. In this case, when $\lambda < 0$, the agent will obviously be averse to his own wage being smaller than his colleague's, and even when $0 < \lambda$, the agent will be averse to any wage gap between himself and his colleague. Therefore, even if a wage provided as an incentive were low, the agent would select a high effort level. Consequently, in the case where $\lambda < p_1/(1-p_1)$, it is preferable that the wage gap between those with a high output and those with a less than high output be narrowed, and that

[8] To be precise, $\frac{1}{(1-p_1)(1+\lambda)+l-1} \geq \alpha$ where $l \equiv p_1 / p_0 > 1$.

the tendency towards performance-based wages should be decreased.

On the other hand, if $p_1/(1-p_1) < \lambda$, then $w^{**} > w^*$. In other words, if we were to consider social preferences, a wage that is strongly dependent on performance is favorable. For this condition to hold, it must at least be that $p_1 < 1/2$. This corresponds to a situation where even at a high effort level, the probability of a project's success is low. Similarly, for this case to hold, it must obviously be that $0 < \lambda$ (inequity aversion). In this case, there are two opposing incentives; namely, an incentive for the agent to make an effort so as to avoid a situation where a colleague receives a wage but the agent does not, and another incentive for the agent not to make an effort so as to avoid a situation where the agent alone receives a wage. However, the more the agent is averse to being the only one to receive a wage, the stronger the latter incentive will become. Moreover, since the probability of the project's success is very low to begin with, there is a high probability that the colleague would fail and receive no wage. Also, as long as $0 < \lambda$ the agent can lessen the psychological disutility by failing in the project. To give an incentive for this type of an agent to select a high effort level, the wage must be further increased when the project is successful. These results suggest that when there is a preference for uniformity among workers, the tendency towards performance-based wages should be strengthened and the wage gap widened in order to steer a difficult project towards success.

3. Motivation Crowding-out

Recently we often hear of discussions about motivation crowding-out as one of the criticisms of performance-based wage systems. These discussions are based on findings from psychological research by Deci (1975) and others which state that external wages undermine the intrinsic motivation of workers and thus cause their performance to decline.[9] For example, when a performance-based wage is suddenly introduced and paid to a worker who finds joy in the very act of performing the work he is assigned, the worker feels as if he is working for money, and as a result his job satisfaction and motivation declines.[10]

This point has been confirmed through a number of economic experiments.

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[9] As far as I know, Frey (1997) was the first to use the term "crowding-out" in this context.

[10] See Frey (1997), and Frey and Jegen (2001) for other discussions on motivation crowding-out.

$$S \equiv -\alpha \max\{\overline{w} - w, 0\} - \alpha\lambda\{w - \overline{w}, 0\}. \qquad (1)$$

$\alpha > 0$ is a coefficient showing the degree of social preferences. In the first term, when the colleague's wage is higher than the agent's own wage, the agent will be subject to psychological disutility expressed as the difference in the wages multiplied by α. There may be a number of cases depending on the value of λ. If $\lambda > 0$, the agent is averse to any wage gap between him and the colleague. This is called the "inequity aversion." If $1 > \lambda$, the agent is averse to any wage gap regardless of whether his wage is higher or lower than the colleague's; however, the disutility the agent feels when his wage is higher than the colleague's is smaller than the disutility he feels when his wage is lower than the colleague's. This is called the "loss aversion." If $0 > \lambda > -1$, it can be interpreted as indicating that the agent feels psychological (positive) utility when his wage is higher than the colleague's. We assume below that $-1 < \lambda < 1$.

Let us obtain the optimum wage in this case. The incentive compatibility constraint of the agent in this case is as follows:

$$\begin{aligned} &p_1 w - d - \alpha w(1 - p_1)p_1 - \alpha\lambda w p_1(1 - p_1) \\ &\quad \geq p_0 w - \alpha w(1 - p_0)p_1 - \alpha\lambda w p_0(1 - p_1). \qquad \text{(ICS)} \end{aligned}$$

The third term on the left side of (ICS) indicates the psychological disutility the agent is subjected to when the agent fails at the probability of $1 - p_1$ and receives no wage and the colleague succeeds at the probability of p_1 and receives wage w. Similarly, the fourth term indicates the psychological utility that arises when the agent succeeds at the probability of p_1 and receives wage w and the colleague fails at the probability of $1 - p_1$ and receives no wage.[7] The same applies to the right side of (ICS), but in this case the agent's probability for success is p_0, because his effort level is low.

On the other hand, the agent's individual rationality constraint in this case is as follows:

$$p_1 w - d - \alpha w(1 - p_1)p_1 - \alpha\lambda w p_1(1 - p_1) \geq 0, \qquad \text{(IRS)}$$

(ICS) and (IRS) may be rewritten as follows:

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[7] Note that the model is based on the assumption that the colleague has selected a high effort level. In cases where social preferences are considered, the condition of $w_f = 0$ needs to be checked, but it is omitted here.

For example, Fehr and Gächter (2002) and Irlenbusch and Sliwka (2005) obtained results from experiments showing that when performance-based wage systems are introduced, the effort levels of agents decline and their efficiency is inhibited in comparison with fixed wage systems. Gneezy and Rustichini (2000) confirm that there is no monotonous relation between monetary incentives for performance and their outcomes. In other words, if performance-based wages have already been introduced, the performance of workers would be enhanced the more the incentives are increased. However, if performance-based wages are introduced and paid to workers who were not paid such wages before, their performance would rather decline. Like Gneezy and Rustichini (2000), Pokorny (2004) obtained results which indicate that incentives and performance are in a non-monotonous relation. These results also showed that when incentives are introduced and then gradually increased, performance at first begins to rise until it reaches a certain point after which it starts to decline, forming a shape of an inverted U.

Frey (1997) calls this characteristic of wages as the "hidden cost of reward." In this section, we examine this point using his model. An agent's utility may be expressed as $U = B - C$, where B is the benefit and C is the cost. If both B and C are dependent on output x and incentive w provided by the principal, they can be expressed as $B(x,w)$ and $C(x,w)$, respectively. With respect to the output, B is a concave function and C is a convex function.[11] In this case, the agent's optimum output x^* is determined at a point that fulfills $B_x = C_x$. Moreover, when x^* is dependent on the incentive provided by the principal, we can express its effect dx^*/dw, by partial differentiation of $B_x = C_x$ by w, as follows:

$$\frac{dx^*}{dw} = \frac{B_{xw} - C_{xw}}{C_{xx} - B_{xx}}. \qquad (2)$$

The denominator on the right side of (2) is positive. On the other hand, in terms of the numerator, C_{xw} expresses the price effect, and B_{xw} expresses the crowding effect. In other words, here the crowding effect is the effect of the incentive on the marginal benefit. According to Frey (1997), there is a crowding-in effect when $B_{xw} > 0$ and a crowding-out effect when $B_{xw} < 0$. If we

[11] In other words, we assume $B_x > 0$, $B_{xx} < 0$, $C_x > 0$, $C_x x > 0$. B_i is B's partial derivative regarding i, and B_{ij} is B_i's second order partial derivative regarding j, where $i, j = x,w$. The same applies to C.

assume that $C_{xw} = 0$ for the sake of simplification, then it would be $dx^*/dw < 0$ in the case of crowding out. This result indicates that by increasing the wage as an incentive, the agent's optimum output level rather declines. Moreover, Frey (2004) explains that when $dx^*/dw < 0$, the optimum wage should be lowered. This shows that when wages provided as an incentive have a negative effect on the agent's marginal benefit, there is a probability that by increasing the incentive the agent's output may decline. So if this is taken into consideration it can be interpreted that it is desirable for the principal to lessen the incentive. This points to the possibility of an increased incentive from performance-based wages to degrade performance by undermining intrinsic motivation, and can be interpreted as supporting criticisms made against performance-based wage systems from this viewpoint. Obviously, the opposite is true when $B_{xw} > 0$. It can be understood from the result that when wages provided as an incentive are fulfilling their expected function of motivating the agent to action, the incentive works to improve the agent's output.[12]

Like Frey (1997), Grepperud and Pederson (2006) analyze the crowding-out effect by using a linear contract in the principal-agent model. Here, a linear contract is defined as a wage contract expressed as a sum of a fixed wage and a performance-dependent piece rate wage. For example, a linear contract can be expressed as $w = \gamma + \beta x$, where γ is the fixed wage and β is the measure to which the wage is dependent on the output (incentive intensity). In many contract theory models that were based on the linear contract, the focus of analysis was on the trade-off between incentive and risk. In other words, the argument was that when the process is not evaluated (or cannot be evaluated) and the resultant performance-based wages are considered as having a risk, performance-dependent contracts are not favorable for those agents who are averse to such a risk.[13] In contrast, Grepperud and Pederson (2006) see their model as analyzing not the trade-off between incentive and risk, but rather the trade-off between incentive and motivation. Details about the model are

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[12] On criticisms against performance-based pay from the viewpoint of the crowding-out effect, see Takahashi (2004). On problems related to those criticisms, see Nakamura (2006).

[13] There are recent studies that doubt the negative correlation between incentive and risk. For example, Prendergast (2002) analyzes cases where there is a positive correlation between the two. Ishiguro (2005) briefly summarizes the theoretical models of these two cases.

omitted in this paper as the essential points are the same as Frey's (1997). Grepperud and Pederson (2006) consider a case of crowding out as one where the agent's cost function is dependent not only on his chosen effort level, but also on the incentive β set by the principal, and as β increases the cost as well as the marginal cost related to the effort level increase. They show that in this case the response of the optimum effort level to the incentive becomes weaker and the optimum incentive also becomes weaker, in comparison with a standard model.

On the other hand, the above results are strongly dependent on the direct assumptions of crowding out.[14] In contrast, Sliwka (2003) considers a model in which the motivation crowding-out effect is analyzed endogenously. In this model, two types of agents are assumed. One is the type found in the standard principal-agent model, and the other is the "reliable agents" who are not opportunistic and always choose the effort level instructed by the principal. Obviously, the principal will only need to offer fixed wages to the reliable agents. In this case, if the fraction of reliable agents is high the optimum incentive would be weaker than in a standard case. Also, when the cost for assessing the output is large, fixed wages are more favorable than performance-based wages. Moreover, Sliwka (2003) discusses a case in which an agent's gain is influenced not only by the gain of other agents, but also by beliefs about their reliability. In this case, it is indicated that a strong incentive will function as a signal that other agents are not reliable types and as a result the agent will lower his effort level.

4. Delegation of Responsibilities and Assessment of Outputs

We understand from the above discussions that in cases where psychological factors are considered, favorable conditions arise when incentives different from those in a standard case are provided. The optimum incentive, however, varies depending on the workings of psychological factors and on the extent of their effect. In this respect, theoretically it may not be too surprising that there are many different views as to the estimation of performance-based wage systems. On the other hand, empirical research has indicated a number of preconditions for the effective functioning of performance-based wage systems.

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[14] On this point, Grepperud and Pederson (2006) concede in the footnote that their model on intrinsic motivation and crowding out is elementary and further research is needed.

For example, Ohtake and Karato (2003) mention the conditions that are common to white-collar and blue-collar workers alike, namely, (1) work sharing and clarification of roles, (2) granting responsibility for work, and (3) opportunities for development of competencies.[15] As regards to white-collar workers, they also point out that granting greater discretion in work is an important factor.

In this section, we therefore focus particularly on the delegation of responsibilities and introduce Daido (2006), who analyzes types of contracts by considering the psychological utility that arises from the possibility of delegation. In this case, we consider a situation where a risk-neutral agent will carry out a project, and a principal will provide either fixed wage contracts (FWC) or pay-for-performance contracts (PPC). In the case of PPC, the principal will decide whether or not to delegate responsibilities. Here, we consider that responsibilities are not delegated when the principal gives instructions on how to execute the project, and that responsibilities are delegated when the agent has to find his own way of executing the project. In this case, it is probable that even if the agent's effort level is the same, the project's outcome will differ depending on whether or not responsibilities are delegated, in other words, depending on how the project is executed. If we consider this point, in addition to normal expected utility there is also the possibility that utility based on psychological factors may arise in the agent. Here, we note the possibility that psychological utility may arise respectively in cases where responsibilities are not delegated and in cases where responsibilities are delegated.

We first consider the case where responsibilities are not delegated. In this case, the psychological utility of the agent originates in resigning himself to a low level of outcome because responsibilities are not delegated. On the other hand, if he had been delegated responsibilities he would have found an efficient way of executing the project that would have realized a high level of outcome, and because of that he would have received a high wage. In other words, the gap between the wage commensurate with the outcome that would have been achieved had he been delegated responsibilities and the wage given to him when responsibilities are not delegated causes psychological utility (or disutility).[16]

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[15] Prior to this, Genda, Kambayashi and Shinozaki (2001) made a similar remark.

[16] There is the probability that even when the agent is delegated responsibilities, he may not be able to find an effective way to execute the project; however, such a probability is excluded here. In other words, in the sense that the agent we deal with here has a better way of executing the project, he is a relatively competent agent.

Secondly, we think of psychological utility when responsibilities are delegated. In this case, there is the possibility that the agent will find a more efficient way of executing the project and attain a high level of outcome; however, the question is how the principal will assess the increased outcomes. If the principal fails to fully recognize the outcomes that have been enhanced because responsibilities were delegated, the agent may feel psychological disutility as a result of the underestimation. We compare each case of PPC taking into account the delegation and non-delegation of responsibilities and psychological utility accompanying that to FWC, and assess performance-based wages through the model analysis.

We now briefly describe the model. Assume there is a risk-neutral principal and agent, and the agent will engage in a project. The project's output x is dependent on the agent's effort level $e \geq 0$, and we assume that $x=e$. The output is verifiable. The principal can choose either a fixed wage contract (FWC) or a pay-for-performance contract (PPC). If the principal chooses PPC, she will then choose either to give instructions on how to execute the work (non-delegation of responsibilities) or leave to the agent the task of finding a way to execute it (delegation of responsibilities). Each type of contract is considered as follows. With regard to FWC, we assume that the agent will choose the effort level that the principal instructs him with and at fixed wage w.[17] With regard to PPC, we assume the linear contract $w(x) = \gamma + \beta x$.

Regarding the delegation of responsibilities, we consider the following. Let μe express the project's outcome when the agent is allowed to choose how to execute it. When $\mu > 1$ (or $\mu < 1$), delegating responsibilities to the agent will yield higher (or lower) output. We look at the case of $\mu > 1$. In this case, the abovementioned psychological utility associated with the possibility of delegation of responsibilities is considered as follows. We first consider a case where responsibilities are not delegated. The source of psychological utility in such a case is the gap between the wage based on outcomes that would have been realized had responsibilities been delegated and the wage based on

[17] For such a contract to be possible, we need to think of the possibility of monitoring the agent's effort level and the possibility of monitoring itself. However, we ignore such considerations here, and assume the agent is a "reliable agent" described by Sliwka (2003) above.

outcomes that are realized without the delegation of responsibilities. When $\mu >$ 1, if the former is larger than the latter then the agent will have a negative psychological utility. The agent's expected utility, when the psychological disutility arising from the non-delegation of responsibilities is considered, is as follows:

$$U = \gamma + \beta e - c(e) - \alpha(\mu - 1)\beta e,$$

where $c(e)$ is the cost of the agent's effort. The last term expresses the psychological disutility resulting from the gap between the wage dependent on outcomes that would have been achieved had responsibilities been delegated and the actual wage.[18]

Next we formulate psychological utility in the case where responsibilities are delegated. In this case, output $x = \mu e$ is achieved. This, however, is the output gained based on a method that the agent chose in executing the project, and how the output is evaluated will depend on the principal. Therefore, the measure of the principal's evaluation of this output is expressed as θ (≥ 1). When $\mu > \theta$, the principal underestimates the agent's output, and the agent is likely to be dissatisfied with the fact that even though he attained a high level of output it was not fully recognized. On the other hand, when $\mu < \theta$, the principal overestimates the output. We consider only the case of $\mu > \theta$ below. It can be interpreted here that the larger the value of θ, the more likely that the principal is making a fairer assessment. In this case, the agent's expected utility is expressed as follows:

$$U = \gamma + \beta\theta e - c(e) - \alpha(\mu - \theta)\beta e.$$

The principal's expected profit is obtained by subtracting the expected value of the agent's wage from the expected value of the outcome. In other words, it is $e - w$ in FWC, $e - (\gamma + \beta e)$ in non-delegated PPC, and $\mu e - (\gamma + \beta\theta e)$ in delegated PPC.

Let us now look at the results obtained from the above model. When we compare the case of FWC where the agent's effort level can be monitored and such an effort level can be forced on the agent, and the case of PPC where psychological utility is not considered, the agent's optimum effort level and the

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[18] Here, we basically follow the formulation of (1), and $\alpha > 0$ expresses the degree of psychological utility. Moreover, if we follow (1), obviously we could consider the case of $\mu <1$, but it will be omitted here.

principal's expected profit will correspond as long as the agent is risk-neutral. In other words, in such an environment the principal's expected profit will be the same whether she chooses FWC or PPC.[19]

Let us now compare FWC and non-delegated PPC. First, the optimum effort level is higher in FWC. In other words, when we consider psychological utility, introducing PPC as an incentive lowers the effort level. This can be understood as a motivation crowding-out effect in the sense that the incentive will have a negative effect on the effort level.[20] The principal's expected profit will also be higher in FWC. Thus, even though non-delegated PPC and FWC are of the same value when psychological utility is not considered, FWC becomes more favorable for the principal than non-delegated PPC when psychological utility is taken into account. This shows that introduction of a performance-based wage system that is not accompanied by the delegation of responsibilities may bring about an unfavorable outcome for the principal.

Lastly, we compare delegated PPC with the last two cases. In this case, the principal will have to make more payments to the agent when her assessment of the output is fairer (when θ is higher), but, at the same time the agent's psychological disutility can be reduced; as a result, it will induce the agent to work at a high effort level. Moreover, the higher θ becomes the greater the latter's effect; therefore the principal's expected profit will be an increasing function of θ. As a result, as the value of θ becomes larger delegated PPC will become more favorable for the principal than non-delegated PPC or FWC. We can understand from these results that a performance-based wage system will function as a favorable system for firms that introduce it when it is accompanied by the delegation of responsibilities and when the outputs are assessed fairly.

5. Conclusion

In this paper, we analyzed principal-agent models in which psychological

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[19] As already mentioned, we ignore the cost of monitoring the effort level and output. Pendergast (2002) assumes that the cost of monitoring output is larger than the cost of monitoring effort levels. On the other hand, Barth, et.al. (2006) consider the cost of monitoring effort levels in FWC. If we consider these points, we can probably say that it is not very clear which monitoring cost is the larger of the two.

[20] It should be noted that the crowding-out effect here means that the effort level declines only in comparison between FWC and PPC. It does not mean that when the incentive intensity rises in PPC, the effort level declines.

aspects were incorporated into the agents' utility, and examined the effects psychological utility has on incentives through comparison with results obtained from standard models. From these results, we discussed how the value of performance-based wage systems could be interpreted from the point of view of behavioral economics. Using simple models, we analyzed whether a wage gap should be widened or not when agents have social preferences, in accordance with the degree of those preferences and with the difficulty of a project. We also analyzed that high wages do not necessarily raise the level of the performance of agents and that if performance-based wage systems were to be introduced, they need to be accompanied by delegation of responsibilities.

Against the backdrop of the rapid development of behavioral economics, there are other interesting models related to the topics dealt with in this paper. For example, in relation to the model of social preferences in Section 2, Itoh (2004), as mentioned in the footnote, analyzes a case where the wages of two agents are determined based on each other's outputs and shows what the optimum contracts would be in light of the nature of social preferences. Neilson and Stowe (2004) make a similar analysis in a case where a linear contract is proposed to an agent with social preferences. As a reference related to the crowding-out of intrinsic motivation in Section 3, Bénabou and Tirole (2003) show that when the principal personally has information about the difficulty of a project or about the agent's ability, the wage the principal offers to the agent will function as a signal on the agent's ability, and a high wage may decrease the agent's motivation.

As we have seen above, much research has been done based on findings in the field of psychology to build new models that will further expand past economic theories and allow researchers to deal with a wider range of topics. A somewhat more unified model that can more comprehensively explain these research results may become necessary in the future. It is hoped that such a new model would give meaningful new interpretations of the analysis of performance-based wage systems, which was examined in this paper, and of other important topics in labor economics.

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What is the Outcome of the Wages Reform in Recent Japan?

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1. What Has Changed: Overview

It has been some ten years since the term "performance-based evaluation system" was introduced. Although we hear a great deal of praise and censure of this term, it has yet to be clearly defined even after so many years. In this paper, I will attempt to identify what has changed since the 1980s.[1]

The current wage reform can be summarized as follows: (1) the wage system has been diversified, (2) the diversification is a result of the accelerated involvement of wage system management in the business model of individual companies, and (3) in parallel to diversification, the core of the wage system has been reformed from the system of the 1980s.

(1) Diversification of the wage system. Company B, a distribution and retail company, provides its all union-member employees with single rate pay. On top of that, employees receive "Individual Performance Pay" (linked to the index of the sales amount per person in relation to the average monthly sales per person) and "Shop Performance Pay" (ranked by the achievement rate of actual sales against the monthly target sales for the section). The "Individual Performance Pay" and "Shop Performance Pay" are calculated every three months, thus effecting a drastic change on employees' salaries every three months. While this "performance pay" directly related to sales is applied only to those who work on the shop floor, a similar wage system is used for those who work in purchases, planning, human resources and

[1] This paper has been written based on the case study research project reported in "*Gendai Nihon no Chingin Seido no Genjo to Tenbo nikansuru Chosa Kenkyu* (Survey Research on the Current Situation and Prospects of the Wage System in Current Japan" published by the Japan Trade Union Confederation Research Institute for Advancement of Living Study (RENGO RIALS), and I am grateful to RENGO RIALS for allowing me to publish this paper. The main focus of my survey is on labor unions, and as such this paper does not fully describe the pay system of the management layer. In general, the pay system of the management layer has been drastically reformed based on the performance-based system. The wage system for union-member employees reportedly has not gone through a drastic reform; however, in this paper emphasis is placed on the fact that the reform has actually been so drastic that it cannot be reversed anymore. Although the case study covers a wide range of industry fields, the observation is limited to large, representative companies in Japan.

other departments, taking into consideration qualitative target values instead of linkage to sales for the "performance pay."

In comparison, Company F, a steel maker, has, after going through a series of wage reforms, maintained a system that takes into consideration the seniority-based treatment for union members. For personnel evaluation they place importance on the use of workers' long-term skill ranks achieved in their workplace, calling it "*Ayumi Kanri* (Progress Management)," a tactful expression representing the practice.

As it has been described above, the wage system has been widely diversified.

(2) Increased association with business models. In comparison, the capability-based personnel system, which was widely applied in the 1980s, exhibited a high degree of convergence. On one occasion Koichiro Imano (1998) deftly described the capability-based personnel system of the 1980s as "the supply-based wage system." The wage system was then based on the implicit premise that the demand of products and services would be generated as a result of the enhanced capability of human resources in the soaring market environment, and that the market would absorb the wage cost that increased under the established system. It is well known that this idea justified the rationality of the wage system that promoted the enhancement of workers' capabilities and that consequently the application of a capability-based wage was widely spread based on the capability-based grading system, appropriately designed for incorporating the enhancement of capability.

The diversification of the current reform is taking place based on the abandonment of such optimistic ideas that prevailed in the market up to the 1980s. Japanese companies learned a painful lesson during the "Lost Decade." The current wage reform, therefore, must encompass the idea of "Winning the Market." In the words of Imano, it might be described as a "demand-based wage system."

To achieve the goal of "Winning the Market" and "Making Profits," wage theory does not serve as a starting point for ideas. Only after clearly defining a business model, establishing a management strategy that allows the company to be supported and appreciated in the market, and setting up a mechanism of job management for the strategy should a wage theory be designed to fit the business model. Therefore, job theory comes before wage

theory.[2]

Company B, the retail company mentioned above, maintains a wage system that has inevitably been generated from the business model, in which its lifeline relies on the capability of "selling out." On the other hand, the steel maker has introduced their wage reform based on the idea that competitive force is provided not only from product development, but also from skills that are built up based on the seniority system applied in their team work in the manufacturing section.

In any case, companies are performing their current personnel reform in the sequence of management reform, job management reform and personnel reform, and are carefully correlating these reform programs. Individual companies are required to establish their business model by taking advantage of their unique core competence for survival in the market, which also contributes to diversification of the wage system.

(3) Table 1 summarizes the changes made to the primary systems under the trend of diversification.

Table 1. Summary of changes

	1980s	2000s
Concept	Job fulfillment capability	Role
Employee grade	Capability qualification grade	Role grade
Base pay	Age-based pay + Capability-based pay	Role pay
Personnel evaluation	Capability evaluation + Motivation evaluation + Performance evaluation	Competence evaluation + Performance evaluation

The following sections are written to ensure that this summary of changes is not based on my dogmatic ideas.[3] Table 2 shows the outline of the reform conducted by different companies.

The following sections are provided: 2. Employee Grades, 3. Base Pay, 4. Changes in Personnel Evaluation, 5. Changes Promoted by Human Resource Concept, and 6. Industrial Relations.

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[2] To put it simply without fear of being misunderstood, it can be said that for men job theory is the body and wage theory is the clothes. In this sense, to vitalize men, for example, physical strength is required before changing clothes to improve the mood or relationship with others. To understand the importance of job theory, refer to Ishida (2003), Nakamura and Ishida (2005) and Nakamura (2006) with a critical view.

[3] Although the bonus is an important item, it is omitted in this paper due to limited space.

Table 2. Outline of reform conducted by different companies

	Employee grade	Base pay	Evaluation system
Company A	Job accountability grade	1. Base pay (32%): Pay raise by zone and according to "Job accountability grade" and "Achievement rate". Range-based pay. 2. Job accountability pay (60%): Fixed amount for "Job accountability grade" and "Achievement rate."	1. "Achievement rate" with target management interview ⇒ Bonus, pay raise 2. Competence review ⇒ Grade promotion
Company B	Job grade	1. Base pay, fixed amount for all employees 2. Individual performance pay 3. Shop performance pay cf. The above is for sales staff. For office staff: 1 + job performance pay (corresponding to "2 + 3" above.)	1. Four types of evaluation and criteria Type 1: Jobs that are mainly evaluated with numerical values for performance. Type 2: Jobs that can be evaluated with numerical values, but that require more information for performance. Type 3: Jobs that can be evaluated with numerical values only for a small portion. Type 4: Jobs that are difficult to evaluate with numerical values.
Company C	Job rank	1. Job pay (30%): Fixed amount for grades 2. Performance pay (70%): Pay raise according to grades, personnel evaluation and zone. Range pay.	1. Target plan ⇒ Bonus, pay raise 2. Career-enhancement plan ⇒ Promotion
Company D	Capability qualification grade	1. Base pay: Pay raise according to grades, personnel evaluation and zone. Range pay.	1. Performance evaluation ⇒ Bonus 2. Evaluation of action and process 3. Capability evaluation ⇒ Promotion 4. Evaluation of action and performance (1 + 2) ⇒ Pay raise
Company E	Mission standard	1. Role pay: Fixed amount for grades 2. Process evaluation pay: Pay raise according to grades and personnel evaluation. Range pay (ceiling is 40,000 yen)	1. Output evaluation ⇒ Bonus 2. Process evaluation ⇒ Pay raise, promotion

	Employee grade	Base pay	Evaluation system
Company F	Capability qualification grade	1. Base pay: Pay raise according to grades and personnel evaluation. No ceiling. 2. Additional pay = Age-based pay 3. Capability pay = Fixed amount for capability qualification grade + Base pay according to qualification × evaluation coefficient	1. Capability evaluation = "Progress Management"
Company G	Job grade	1. Job pay: Pay raise according to grades, personnel evaluation and zone. Range pay.	1. Performance evaluation 2. ACE (Accountability and competence evaluation) 1=60%, 2=40% ⇒ Bonus 1=40%, 2=60% ⇒ Pay raise 3 occurrences of 2 ⇒ Promotion
Company H	Role grade	1. Monthly pay: Pay raise according to grades, personnel evaluation and zone. Range pay.	1. Performance evaluation ⇒ Bonus 2. Competence evaluation ⇒ Pay raise
Company I	Capability qualification grade based on role	1. Qualification pay: Fixed amount for grade 2. Capability pay: Pay raise according to grades and personnel evaluation. Range pay (ceiling is 28,000 yen)	1. Achievement of sales index in the 1st/2nd half 2. Achievement of targets in the 1st/2nd half 3. Achievement of annual target 4. Evaluation of job fulfillment capability (Competence evaluation)

2. Employee Grades

An organization is constituted by hierarchy, indicating a structure of different grades, and it is of the primary issue for companies to manage the hierarchy of their employees.

Table 3 below summarizes the criteria used by companies studied for research in categorizing their employees into different grades. Without adhering to a strict definition of terms, three groups of criteria are identified: (1) job, (3) capability and (2) the role that is based on a concept between the two.

The table alone clearly indicates that the personnel reform was substantial. The system of capability grade was no longer the primary system employed by 90% of large companies until the 1980s. Instead, the systems of job grade and role grade began emerging as the primary system.

Table 3. Categories of employee grades

(1) Job grade	Job grade (Companies B and G), job rank (Company C)
(2) Role grade	Job accountability grade (Company A), mission standard (Company E), role grade Company H)
(3) Capability grade	Capability qualification grade (Companies D, F and I)

Now, what is the difference between job grade and role grade? Which represents the current reform more appropriately: job, role or capability grade? To answer these questions, observations are required with examples listed below. Due to the limited space available, the main points are briefly summarized in this paper.

Table 4 summarizes advantages and disadvantages of these three employee grading systems. Employee grades can be characterized from four viewpoints: (1) based on job/human resource, (2) human resource/job matching function, (3) human resource development function, and (4) evaluation function.

Table 4. Advantages and disadvantages of three employee grading systems

	Basis	Correction of mismatching between human resource and job	Human resource development function	Performance evaluation function
Job grade	Job or position	Strong	Weak	Average
Role grade	Human resource	Strong	Average	Strong
Capability grade	Human resource	Weak	Strong	Weak

Among these three employee grading systems, the “role grade system” is expected to take the primary position. The reasons for this are: (1) it is based on “human resources,” making it more appropriate to consistently position all employees compared with the “job grade system,” (2) it provides opportunities to correct mismatching between “human resources” and “jobs” to do, one of the seniority-related problems, in a similar way as in the “job grade system” (however, it may be disadvantageous if the “capability grade system” is maintained), (3) it is based on “human resources,” making it easy to incorporate the regulations of “capability” into the “definition of grades” with the possibility of adding human resource development functions (this is the most advantageous function of the “capability grade system,” but disadvantageous

for the "job grade system"), (4) the concept of "role" is suitable for developing rules within an organization out of information that is obtained from the market when such market information is received as a part of personnel functions, since the following conceptual structure is natural: the demand of the market indicates "contribution to added value" that equals the role multiplied by performance. "Role" grades indicate grades in the normal state for contribution to added value; therefore, "performance" can be set at the "target" level corresponding to each "role grade," representing the difference between the target and achievement. The "capability grade system" is weak in this function.

Summarizing all that has been discussed so far, the "role grade system" is expected to be the mainstream in future.

3. Base Pay

3-1. Characteristics of Changes

No information is available on the old system used by Company A. Comparisons cannot be made for Company F due to the merge, and Company B has irregular factors (fixed amount for the base pay to all union members). Excluding these companies, Table 5 summarizes the history of the wage systems of other companies.

The primary change that can be observed in Table 5 is that the wage system has been simplified among all other changes. Taking a look at the base pay alone, the number of pay items has been reduced from 3 to 2 for Company C, 6 to 2 for Company D, 3 to 2 for Company E, 2 to 1 for Company G, 5 to 1 for Company H, and 4 to 2 for Company I.

The second change that can be observed is the elimination of age-based pay. Companies C, E, G and I have eliminated the age-based pay that they previously had.

The third change that can be observed is the emergence of the fixed amount by grade = single rate by grade. In place of the age-based pay that has been eliminated, the pay item of the "fixed amount by grade = single rate by grade" has expanded, and is seen as the "job pay" of Company C, "role pay" of Company E and "qualification pay" of Company I.

Table 5. History of wage system of different companies

Company C	1986 Base pay = Age-based pay Base pay by job Personal pay by job	2001 Base pay = Age-based pay Job pay: Fixed amount by grade Performance pay: Pay raise by zone	2004 Job pay: Fixed amount by grade Performance pay: Pay raise by zone
Company D	Old system Capability-based base pay Capability pay Qualification pay Job pay Special addition Instructor addition	2003 Base pay: Pay raise by zone Base pay addition (App. ¥20,000 for group leader)	
Company E	Old system Fixed pay = Age-based pay Capability pay: Fixed amount by grade Job and capability pay: Pay raise by evaluation	2003 Role pay: Fixed amount by grade Process evaluation pay: Pay raise (Max ¥40,000)	
Company G	Old system Base pay: Pay raise Job pay: Fixed amount by evaluation	1997 Personal base pay = Age-based pay Job pay: Pay raise by zone	2003 Job pay: Pay raise by zone
Company H	Old system Base pay: Pay raise Qualification allowance Job pay Performance pay Age-based pay	2004 Monthly pay: Pay raise by zone	
Company I	Old system Base pay = Age-based pay Qualification pay: Fixed amount by grade Skill learning pay: Pay raise Performance pay: Fixed amount by evaluation	2002 Qualification pay: Fixed amount by grade Capability-based pay (Max ¥28,000)	

The fourth change that can be observed is that the “pay raise by zone” has been generalized. Although subtle, an important change has been made to pay raise management, which is the generalization of the “pay raise by zone.” It is shown by the “performance pay” of Company C, “base pay” of Company D, “job pay” of Company G, and “monthly pay” of Company H.

3-2. Base Pay after Reform

Following the four changes described above, it can be said that the base

pay has changed in the way described in Table 6. The “age-based pay” and “capability pay” typically observed in the 1980s has changed to what is primarily described as “role pay” in the 2000s.

Table 6. Change of base pay

	1980s	2000s
General workers	Age-based pay ・Fixed amount by age ・Periodic pay raise Capability pay ・Pay raise according to “capability grade/evaluation” or Pay step management according to “capability grade/evaluation” ・Range pay with loose upper limit ・Periodic pay raise	Eliminated Role pay Type 1: “Fixed amount by role grade” + “Pay raise according to role grade/wage zone/evaluation” Type 2: “Pay raise according to role grade/wage zone/evaluation”
Managers	Capability pay ・Pay raise according to “capability grade/evaluation” ・Range pay with clear upper limit ・Periodic pay raise	Role pay “Fixed amount by role grade/ evaluation” cf. Bonus is broken down to “fixed amount by role grade/ evaluation/organizational performance evaluation,” and therefore the total annual salary is determined by evaluation and organizational performance.

Table 6 indicates one of the models. In practice, three types are found, as shown in Table 7.

Type 1 in Table 7 is found only with Company C: Job pay (30%) = Fixed amount by grade + Performance pay (70%) = Pay raise by zone. Companies E and I use Type 2 based on the “fixed amount by grade.” Some additional pay is provided; however, its proportion is minimal. On the other hand, Companies D, G and H use Type 3 consisting of “Pay raise by zone” for their base pay.

It is difficult to say which type is the mainstream, but we must put focus on the fact that the wage table is now based on the “Fixed amount by grade” and the “Pay raise by zone.”

Table 7. Different types of base pay

	Description	Examples
Type 1	"Fixed amount by grade" + "Pay raise by zone"	Company C: "Job pay" + "Performance pay"
Type 2	"Fixed amount by grade" (+ Additional pay)	Company E: "Role pay" (+ "Process evaluation pay") Company I: "Qualification pay" (+ "Capability pay")
Type 3	"Pay raise by zone"	Company D: "Base pay" Company G: "Job pay" Company H: "Monthly pay"

The new wage table provides rules to minimize the periodic pay raise. Under the "Fixed amount by grade," pay raise is not provided as long as one remains on the same grade. As it is shown in Table 8 below, the "Pay raise by zone" system provides a strict pay raise for higher wage range and generous pay raise to lower wage range, based on the position of wages within the grade wage range (the top one quarter of the table (I) to the bottom one quarter of the table (IV), for example), converging wages to the policy line at the middle level of the range as long as individuals remain on the rank for long period of time. For this purpose, the general rule has been made to reduce pay for those who receive a high-level wage when they are evaluated as low. As a result, depending on the proportion of the total amount of pay reduced and the total amount of pay raised, the "Pay Raise by Zone" does not necessarily produce institutional pay raises under this mechanism.

Table 8. Management of pay raise by zone

	S	A	B	C	
I	0	−	−−	−−−	
II	+	0	−	−−	Policy line
III	++	+	0	−	
IV	+++	++	+	0	

By resetting the employee grading system as well as minimizing the "Pay raise system" for the base pay, as described above, a drastic reform was conducted on the conventional seniority-based wage system.

Certainly, the family system and working conditions of family members do not change as fast as personnel reform, and consequently the seniority system is applied for the wages of employees in the age group of 20s and 30s naturally

as long as the level of the initial wage remains at the current level. This requirement can be provided firstly by operating grade promotion and secondly by operating the low-level grade "pay raise" without any pay reductions.

The design of the wage system that converges on the policy line indicates inclusion of negative pay raises. Applying the "fixed amount by grading system," Companies E and I do not practice negative pay raises in principle; however, the practice of negative pay raises is possible in the portion of "additional pay" that is not a large amount. In many cases, it is claimed that "there is no negative pay raise as long as they work normally." However, it is clearly different from the old system, which was active up to the 1980s and institutionally did not have negative pay raises.

4. Evaluation System

The performance-based system is ultimately considered as an increase of the weight on the "evaluation of individuals work = personnel evaluation." Everyone knows, however, that the current reform of wages highlights the increasing complexity of the evaluation system while the wage system is being simplified. After reviewing several cases, I received an inchoate impression that the system has become quite complex.

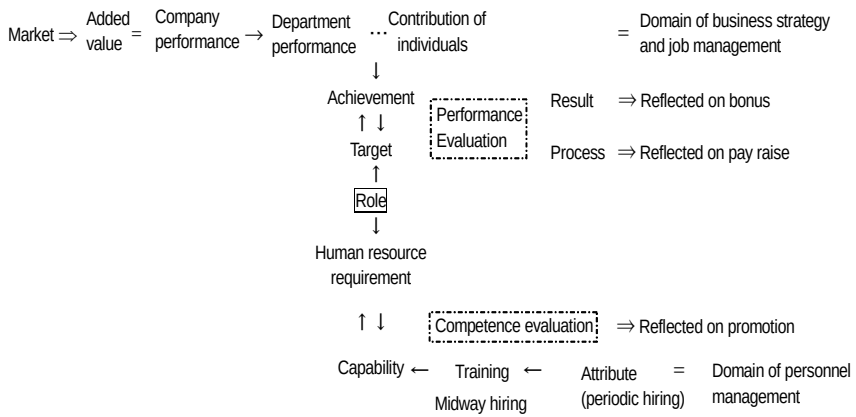
Despite my impression, here I would like to clearly state the changes that have been made. Without expressly showing the change that took place in the evaluation system, one cannot say that the personnel system has been drastically changed. As times have changed, so does the evaluation system.

4-1. Change in the Paradigm of the Evaluation System

Since personnel reform was initiated from management reform, evaluation is now positioned differently. This change implies that evaluation now has a different aspect in business operations. This is illustrated in Figure 1. (1) The domain of business strategy and job management now has a clear profile, ensuring the possibility for "individuals to make contributions in increasing added value" for the company to be "appreciated in the market." The most important issue will be how to evaluate "individuals for their contribution." (2) This evaluation is based on performance evaluation. Evaluating performance requires criteria to be set. The criteria should be generated from the "target" or expected performance. A functional organization has a hierarchy or an order of

levels for stable "expected performance." To this end, the "role" is used in the current reform. Therefore, "performance evaluation" is the system in which "target level" is determined by the "role grade" with evaluation of "achievements" in comparison to the "target." (3) Since "performance evaluation" is conducted based on the "role grade," there is another issue of defining the "role" in terms of capability and assigning "human resources" to appropriate "roles" for supplying (training or hiring) human resources who take the "role." In other words, adjustment is needed for the "role" and "human resources" = "capability." This is what competence evaluation is about.[4] Here again, "actions conducted" are evaluated based on the "expected actions," and the "role grade" must indicate the level of "expected actions."

Figure 1. Framework of performance-based evaluation system

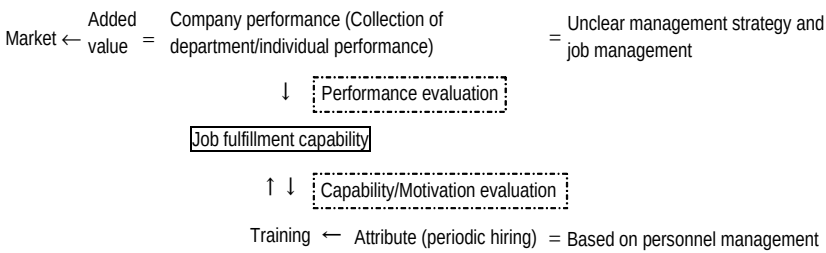


On the other hand, Figure 2 shows aspects of evaluation employed during the period of capability-based evaluation for the purpose of reference. In this case, as Imano (1998) explains, everything was for the training of "job fulfillment capability" and evaluation. "Increased capability" would lead to increased added value, which would in turn be appreciated by the market in an

[4] Interpreting "competence" as "doing..." in comparison to "job requirements" in the old system as "capable of doing..." is superficial, and the two terms are not of grammatical difference. It is more correct to understand that "competence" is defined realistically, since "role" is defined from the viewpoint of business strategy or job management. Consequently, "competence" can be defined by job and managerial objectives.

upward trend. It was a happy period of time when such an optimistic view was accepted. The “evaluation” was based on “capability evaluation,” primarily to evaluate “job fulfillment capability.” The criteria were ultimately defined with workplace hierarchy and relative evaluation, instead of “any objective criteria.” These criteria were derived from a series of daily operations after a long period of time and as such are rather convincing. The “performance evaluation” in those days was somewhat of a minor addition based on the observation of capability evaluation from term to term. The “motivation evaluation” was based on personality and therefore the evaluation must have been stable.

Figure 2. Structure of capability-based evaluation



Consequently, the change was made due to the fact that the market force exceeded that of the company organizations, making the profile of business strategy and job management clear. As a result, integration into the personnel management had to be taken care of by the “role” that would “contribute” to the achievements of the company and department targets. The “role” that serves for integration needs to indicate the level of “expected performance” on one hand and the level of “expected actions” on the other.

In this way, performance-based evaluation was constructed with the “role grade” serving as a scale of “performance evaluation” and “competence evaluation.”

4-2. Comparison with Examples

How appropriately does this evaluation structure match the examples? Table 9 shows an overview of this by not including any details. (1) Companies are organized in terms of “performance evaluation” and “competence evaluation” systems. Company B integrates “competence-based” qualitative evaluation in its performance evaluation for staff in particular, making it unique

among all. Company F maintains capability-based evaluation and does not segregate one system with the other. (2) The "performance evaluation" is reflected on determination of bonus amount, while the "competence evaluation" is reflected on promotion (rank upgrade). Pay raise is divided into three types among the examples: Except Companies B and F, Companies A and C determine their pay raises based on the performance evaluation, Companies E and H determine it based on "competence evaluation," and Companies D, G and I determine it based on the combination of both evaluations. Compared with the old system in which "performance evaluation" was never reflected in pay raises, here short-term evaluation is also reflected based on some conditions.

Table 9. Performance evaluation and competence evaluation

	Performance evaluation	Competence evaluation
Company A	Achievement rating ⇒ Bonus, pay raise	Competence review ⇒ Promotion
Company B	Evaluation of 4 types ⇒ Individual performance pay, shop performance pay	
Company C	Target plan ⇒ Bonus, pay raise	Career-enhancement plan ⇒ Promotion
Company D	Performance evaluation ⇒ Bonus	Capability evaluation ⇒ Promotion Integration of (a) action/process evaluation +(b) performance evaluation ⇒ Pay raise
Company E	Output evaluation ⇒ Bonus	Process evaluation ⇒ Pay raise, promotion
Company F	(?) Performance evaluation ⇒ Bonus	Capability evaluation ⇒ Pay raise, promotion
Company G	Performance evaluation (60%)/ACE evaluation (40%) ⇒ Bonus	ACE (accountability, competence evaluation) evaluation ⇒ Promotion Performance evaluation (40%)/ACE evaluation (60%) ⇒ Pay raise
Company H	Performance evaluation ⇒ Bonus	Competence evaluation ⇒ Pay raise, promotion
Company I	Evaluation for achievement of sales index in 1st/2nd half ⇒ Performance bonus (sales staff) Evaluation for achievement of target in 1st/2nd half ⇒ Basic bonus (sales staff) ⇒ Bonus (back-office staff) Evaluation of achievement of annual target ⇒ Pay raise for 50%	Job fulfillment capability evaluation ⇒ Pay raise for 50% ⇒ Promotion in combination with exam

5. Concept of Human Resource Management That Has Promoted Changes

I have described the changes that took place. A variety in the wording of changes are found in examples of reform; however, there is consistency in the concept of reform regarding variety in the intention of reform. I wanted to emphasize that the system is rather simple when observing the system based on the concept of reform.

The question is what the concept of reform is. How does it differ from the one that prevailed up to the 1980s? The turning point is related to how to consider the relationship between the organization and the market. The difference is either starting with getting the organization to think of human resources or with getting human resources to think of the organization.

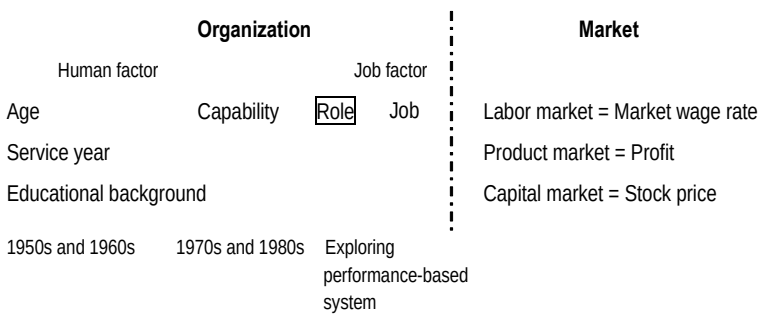
For the period from confusions arising from the war to the 1980s, Japanese companies worked towards personnel reform for every occasion encountered. It is a history of attempts to promote activation within the organization, searching for factors that would determine the order within the organization and remuneration.[5] For the period up to the 1960s, the criteria were primarily based on the following: [age, service years and educational background], with some consideration given to individual evaluation. With the pressure from international competition after liberalization of trade and capital, the "capability-based system" was introduced from the 1970s to 1980s to reform the system.

Throughout this period there was consistency in that, first of all, of the determining factors of [age, service years, educational background] and evaluation, the concept of job fulfillment [capability] was used for reorganizing and reinforcing the evaluation part and reducing the weight of [age, service years, educational background] in an attempt to correct problems inherent to the seniority system; however, they failed to eliminate the factors of [age, service years, educational background] that are incorporated in the determining factor [capability]. Consequently, companies continued to shoulder the burden of the seniority-based wage system at all times. Along with the aging of their employees, the issue became more serious year after year for organizations.

[5] This attempt by management meant introduction of a new wage differentials to labor unions and seriously affected union members in the workplace. This wage reform actually resulted in the major disintegration of unions, and the strained industrial relations only improved in the 1970s.

Secondly, up to the 1980s the design of reform and system was not based on the market; it was always based on ideas generated within the organization. The remuneration system was conceived by implicit optimism with the [upward market] assuming that [the market would appreciate the organization for its performance on capability development and human resource training]. That is why it was called "supply-based" personnel management. Thirdly, meanwhile, a number of attempts were made to prevent an inclination towards the seniority system by incorporating more objective job factors into the [capability] factor, although it was not based on the market. These attempts were made to restrict the seniority element embedded in [capability] factor by introducing the [job] factor; however, the attempts were often "laborious but fruitless" due to characteristics of Japanese companies, which traditionally provided flexibility in job assignments and job descriptions.

Figure 3. Conditions determining criteria



To summarize the reforms in line with Figure 3, the reforms that took place up to the 1980s consisted of changes in the weight of the determining factors for remuneration shown from left to right in the table (or from human factor to job factor); that is from the "pre-conditional" factors of [age, service years, educational background] to the "post-conditional" factors of [capability]. To prevent the influence of the seniority system that was persistently applied, manufacturing industries in particular seriously and repeatedly tried to incorporate [job] factor into [capability] factor; however, the persistent application of the seniority system was preserved somewhat for the normative, moral concept that employees should be remunerated for their improvements and long-term practice of sincere work represented by long years of service.

This means that the Japanese personnel system up to the 1980s was designed for harmony between activation through the competition between human resource development based on capability and the moral concept remunerating workers for their hard work. It can be said that companies then were "gentle and kind." These "gentle and kind" companies had the most outstanding performance in the world market. That was the situation in the 1980s.[6]

After reaching a peak the situation then changed for the worse. In the painful struggle that followed, the organization theory had to be dismantled by way of the market theory, thus pushing the dismantling process to the limit. This was the introduction of the performance-based evaluation system.

Refer to Figure 3 again. The market as a source of ideas consists of the labor market, product market and capital market. How, then, can it be translated into the personnel system? The primary work of management planning was to convert "market sign = price" into "organizational sign = rules."

Firstly, the wage rate that existed in the labor market has to be accepted, and then it is possibly taken into account. Although capability-based competition took place in organizations, they had already set wages at high levels due to the seniority system. The more the market wage rate is applied, the more the wage cost is reduced. We, however, do not have the market wage rate for long-term, regular employees in Japan.[7] The market wage rate is widely applied to part-timers, dispatched workers and contracted workers. The labor demand is concentrated in these sectors, expanding the supply system and rapidly enlarging the external human resource market. Through efforts to reorganize their work, companies segregated jobs that did not require skill accumulation and outsourced these kinds of jobs.

Secondly, how can personnel management be changed for those who

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[6] For more information on this period, please refer to Kusuda and Ishida (2004). They vividly describe how deeply designers of the personnel system understood the environment of the time and how they applied the system in practice.

[7] It must be difficult to offer leader positions of work groups for vehicle assembly lines or steel sheet rolling mills; however, newspapers and job magazines do not even offer positions of account mangers, personnel managers or production control section managers. This is quite different from the U.S.A. It indicates that there is no market wage in a true sense. What we have is the wages survey according to business scale, age, job title and educational background. These elements cannot be directly used for the basis of wage determination within the organization.

cannot be taken from the labor market? This is a question of how to apply the product market (sales and revenue) or capital market (stock price), "market sign = symbol," to the personnel system. To this end, the procedural steps should be as follows: (a) reconstruction of management strategy, (b) reorganization of the organization, (c) reconstruction of job (work) management, and (d) personnel management.[8]

To accept the logic of "market → business strategy → reorganization of the organization → job management → personnel management," the personnel management system requires a mechanism to promote the job fulfillment of individuals in line with organizational targets (job management functions) on one hand, and to ensure essential personnel functions (personnel management functions) to place human resources in the right order on the other. In this respect, the old system had a weak relationship between the "capability grade system" and job management functions.

To combine the job management function and personnel function, the grading system had to be introduced for defining the level of work targets for individuals. The "role" was suitable to this since it implies the grade of contribution to the achievement of organizational targets.

In reaching this theory, it was natural to use "performance evaluation" for job management functions to evaluate the target and achievement, and "competence evaluation" for the personnel management function, based on the "role grade system" and making the best use of the job management function and personnel management function.

6. Industrial Relations

6-1. Landing Position without the Presence of Industrial Relations

It is clear where the reforms have landed. Unfortunately, they have landed on a weak foundation, both theoretically and practically. It is weak because it indicates a high probability of a "landing position without the presence of industrial relations."

Theoretically, the "price of work", in other words the trading rule between the job and wage, is not determined by collective bargaining; however, it is

[8] It was not mentioned due to limited space, but the premises of the personnel management is well explained by application of the holding company system. This system broke down companies into operational companies to quickly respond to the reconstruction of strategy and to conduct smooth job management.

determined through a target interview and an evaluation between the superior and subordinate. Thus, the issue is how to consider this practice. When the trading rule is solely determined individually through the target interview between the superior and subordinate, can that trading rule be called a "fair system"?

From this theoretical viewpoint, both sides have to be examined and in particular the "work" part of "price of work" (= quality and volume of work) and the "price" part (= wage).

For "price" (= wage), signs of efforts that have been made are observed, starting from ensuring time for the target interview, checking feedback, improving the operation, and to forming rules to more closely match the "fair system" in designing the wage system. (1) For the younger generations, the conventional "capability-based system" is used more to evaluate their skill learning, work knowledge and capability improvement. (2) For the middle management group, (a) "performance" is replaced with "performed capability" for jobs that shows only the qualitative aspect of their "work behavior", observing and evaluating "performed capability" on an annual basis against their specific target and behavior performance, including processes without adhering much to past performance.[9] (b) For jobs that show the quantitative aspects of their "work behavior" numerical evaluation can be used, but labor-management consultation needs to be enhanced to "provide the feeling of fairness" for the situation. Company B, the distribution and retail industry is one of the typical examples.[10]

Examining these in details, the current reform cannot be described for sure as a "landing position without presence of industrial relations," but the problem is deep rooted. To put this without fear of being misunderstood, "price" (wage) is a minor issue of the current reform. The root problem lies in the "work" part that included the driving force of the reform (reform of business model); however, no serious efforts are made in establishing collective rules for the target setting. This makes industrial relations more difficult in Japan.

Let me explain this a little further. The target interview determines the work target of individuals. The target can be the level of work, but it does not

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[9] Toyota is a good example. Please refer to Nakamura and Ishida (2005), Chapter 6.

[10] Following the personnel reform that was based on the achievement of numerical targets, the labor union of Company B introduced a mechanism to discuss business plans at the labor-management consultation.

define the volume of work. Of course, the volume of work is an important issue for individuals which they are concerned about, so they consult their superior at the target interview or during day-to-day work in regards to this. The superior would probably answer that it is the job of the worker to perform their task with capability, concluding the quality and volume of work as the problem of the capability of individuals.

For the current wage reform, there is a paradigm change that "job performance" is "not volume but quality of work." This is not wrong, however, it does not eliminate the problem of "volume," thus leaving it unsolved as to which common rule should be used to determine "volume." The level of work of individuals can be discussed only after this problem of "work volume" is defined with "fair" rules.

6-2. Performance-based Evaluation and Activating Labor-management Consultation

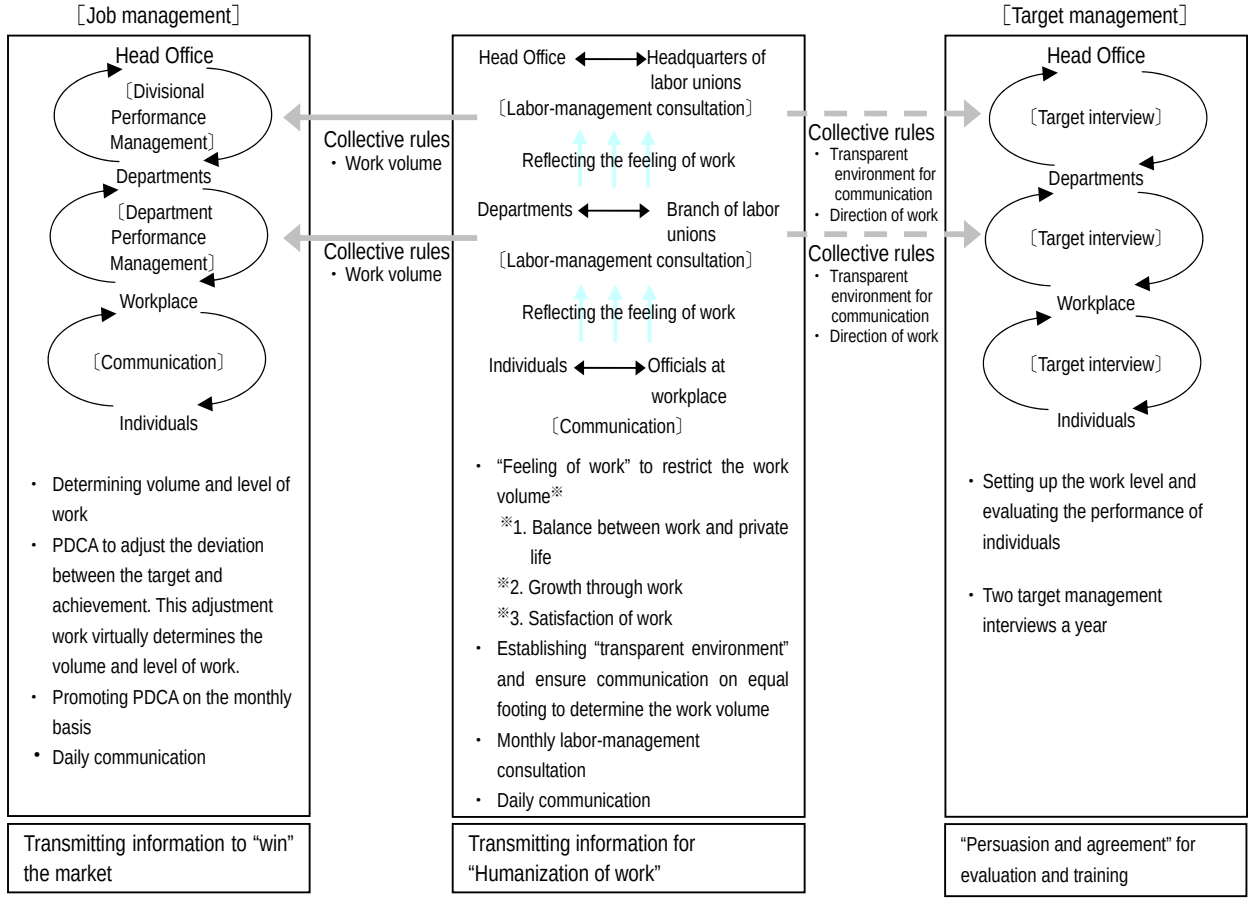
The above overview summarizes that personnel evaluation now provides a more decisive influence than ever for determining the terms of employment.

The target is derived from the level of work and the level of work is derived from the management plan. It is necessary for labor unions to maintain the last defense line, and loosing it prevents labor unions from getting involved in the determination of the wages of union members thus makes it virtually nonexistent. Therefore, they must uniquely associate their domain, once called "participation in business," with "labor-management consultation system" at each level.

Now I would like to explain how to get involved with the rule of "work" described above. Please refer to Figure 4 "Potentials of Labor Unions in Japan."

Companies today have the following two elements for "work" management: (1) job management, and (2) target management (target interview). The job management (1) cannot be described in detail due to the limited space available, therefore, please refer to Nakamura and Ishida (2005) for this topic. The plan (target) is determined for each term in a chain, linking company target - department target - workplace target - (individual target) with PDCA (Plan, Do, Check and Action) operated to achieve these targets. This practice is normally repeated on a monthly basis, although it differs by company and business fields, and as such determines the whole job (quality and volume). The target management (2) does not need to be explained in detail. At the beginning of

Figure 4. Potentials of labor unions in Japan



each term, (2) does not need to be explained in detail. At the beginning of each term, (2) does not need to be explained in detail. At the beginning of each term, individuals and their superiors meet to set work targets, and evaluation is conducted at the end of term to provide feedback. This is also ideally performed based on PDCA. This PDCA cycle rotates at most twice every year. This target interview determines the level of work.

This mechanism has the problem that the job management (1) determines the total volume of work and overall level, and the target management (2) determines the work level of individuals; however, it does not determine the volume of work for individuals.

Here, labor-management consultation (3) can play a role. To determine the volume of work for individuals, the "required number of workers × working hours × work density" must be determined. Working hours are the central item of labor-management consultation. While it is difficult to discuss the number of workers required and work density, it can be collectively expressed in working hours in terms of workload and difficulty of the job. It is essential to consider labor-management consultation (3) in relation to determination of the "job." White-collar workers need to talk about the "monthly work plan," since it is difficult to express their volume of work in terms of working hours. In fact, the labor unions of prominent automakers discuss the "development plan" of the product development department for their labor-management consultation to prevent the work going out of control.

Based on this, labor-management consultation (3) has an extended role to play: it extends to the "participatory consultation" of the management plan for job management (1) on one hand and to the "workplace activities" of the target interview for the target management (2) on the other. Due to the limited space, the summary only is described. The "participatory consultation" extended to job management (1) should provide a "better understanding" of management plans at the company level, department and workplace. The "workplace activities" of the target management (2) should provide union members with a precise understanding as to the extent that they can explain the focal point of their work relation to the management plan for the target interview. This is necessary also to reform and fulfill corporate governance and CSR (Corporate Social Responsibility), which is one of the hot topics today. On the other hand, the "workplace activities" (2) are designed to provided union members with information required to sufficiently understand the business plan prior to the

target interview, also giving them opportunities to self-sufficiently consider what to discuss with their superior. In the beginning of the term, seminars may be required to prepare for the target interview. Subsequently, at the end of term a “feedback improvements” seminar should be organized so that information can be distributed throughout the workplace without difficulty.

By making every effort to devise solutions for determining common rules for work, the first valuable step will be made towards the 21st century, thus filling the world of work with vital human energy. The issue of industrial relations has boiled down to this level in Japan.

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Seikashugi from an Employee Perspective

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I. Introduction

It is believed that not until Company A, a major domestic electronics manufacturer, introduced a performance-based pay system called "*Seikashugi*" that the word first drew attention in Japan.[1] At the time, Company A was attempting a major change in their line of business from hardware manufacturing to software development and sales. In the software development business an engineer's skill greatly influences productivity, occasionally boosting it 200 fold in a single month, and at the time their management benefits system had reached its limit. Through technological innovation centered on ICT, they attempted to change wage distribution rules. There was a major turning point in the personnel system reforms of Company A with the concept of a salary based on performance instead of working hours.

As for the subsequent reaction in economic circles, the Japan Federation of Employers' Associations released a proposal in 1995 entitled "Japanese management in the new age" that described the future employment and wage system. In this proposal they propose a wage system design concept stressing the need for transition from the idea of emphasizing age and years of service to a system where wages rise in accordance with boosts in job competence, and business results as a means of revitalizing corporate management. Clearly the emphasis on business results in addition to the idea of a merit-based personnel system now being emphasized in major companies in Japan was an epoch-making turning point, much like the introduction of a merit-based personnel system and ability-based grade system that distanced itself from the seniority system.[2]

However, even with regards to performance measurable levels of achievement vary within the company as a whole, between departments and

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1 Nikkei Business Editorial Department (2001): 26.

2 Recently, arguments in politics, labor and management have become heated and have redrawn attention to the introduction of a Japanese model of white-collar exemption and "*Seikashugi*."

teams and individual employees. Until now, Japanese companies have paid wages according to fluctuations in the achievement of the company as a whole in the form of bonuses and a term-end allowances. Therefore, in a historical context from the 1990's until the present, the fact that *Seikashugi* wages reflect fluctuations in short-term individual achievements has been emphasized, and this is thought to be understood by companies and workers.

In this paper *Seikashugi* is considered to be "ideal type" and is explained in more detail in the next section, "Organization principles of *Seikashugi*." In short, it is an employee assessment and compensation system for companies wishing "to assess and offer benefits based on short-term individual business results and performance."[3]

Seikashugi has been the personnel system reform of choice for many companies from the 1990s to the present. Since employees are the ones influenced by the reform, it is believed that in Japanese companies the manner in which employees receive *Seikashugi* decides its long-term success or failure. It is our intention to clarify in this paper the employee perspective of *Seikashugi*, which is now being introduced in a large number of companies.

II. Organization Principles of *Seikashugi*

Naturally, before this mechanism was introduced companies already had a personnel system for assessing employee performance and adjusting wages accordingly. For instance, even companies with an ability-based grade, which is a form of a merit-based assessment and compensation, have often measured performance and reflected it in the form of a bonus. One could claim that no personnel system neglects to measure performance (roughly speaking 'marked ability') as the foundation for personnel management.

The question needs to be asked: Wherein lies the difference? In other words, in what manner is the now problematic *Seikashugi* a reform system for assessment and compensation? In short, *Seikashugi* differs greatly depending on the company

[3] Okunishi (2001) insists that the following three elements of *Seikashugi* be filled: 1) Emphasize business results and not various other variables affecting them (skill, knowledge, and effort, etc.), 2) Emphasize short-term business results over long-term business results, and 3) Create a major differential with the actual wage. Since this paper mentions whether the wage differential will rise as a result of *Seikashugi*, here element 3) is excluded. In this paper *Seikashugi* is used to measure the divergence from reality since it is the ideal type, and not to explain the performance oriented treatment system.

as it has various forms and applications. Based on the premise of such variability, this paper sees the *Seikashugi* reform system for assessment and compensation as distinctive of the traditional assessment and compensation system based on the three following features: 1) Weakening of a seniority structure and an ability development structure, 2) Proportional wage costs in accordance with performance, and 3) Strict and precise assessment.[4]

First, 1) Weakening of seniority and ability development structures denotes a reduction in the wage determinant factor that existed in the traditional wage and assessment system. That is, the reduction and elimination of the seniority and merit elements in wage determination as well as the abolition and decreased emphasis on the evaluation of effort and attitude, which is the conventional trend of evaluation based on age and seniority.

The reduction and elimination of seniority and ability growth elements in wage determination is particularly important; in particular, the elimination and reduction of the ability growth element since it means that many companies now have doubts regarding the ability-based growth system, which has saved as a backbone of Japanese HRM since the late 1950's. For instance, according to the JILPT corporate survey[5] carried out in 2004 by the Research Section of the Independent Administrative Institution, The Japan Institute for Labour Policy and Training, 44 % (539 companies) of the 1,200 sampled changed or eliminated their ability-based grade system, and 43 % (528 companies)

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[4] In addition, the Japan Productivity Center for Socio-Economic Development Productivity Labor Information Center, Yoshio Sasajima (2000), etc. makes a similar argument.

[5] For analyses purposes this paper used questionnaire surveys conducted by the Independent Administrative Institution, The Japan Institute for Labour Policy and Training in 2004 and 2005 as its primary data sources. Two types of surveys were conducted, one was a "corporate survey" conducted in October, 2004 that obtained effective responses from 1,280 companies (rate of return 10.8%) after sending the survey to 11,865 in order of decreasing number of workers, targeting mainly companies located in Japan with more than 200 workers. The other was a "workers survey" conducted in March, 2005 that was directly recovered by mail and sent under special distribution principles wherein 30 individual questionnaire forms were sent to each of the companies that answered the corporate survey (hereafter, they are called the JILPT corporate survey and JILPT workers survey respectively). In the JILPT workers survey 2,823 forms in total were collected. The JILPT corporate survey had the specification that it could be matched with the data of the JILPT workers survey. The detailed survey results are summarized in the following reports: The Japan Institute for Labor policy and Training (2005), The Japan Institute for Labor policy and Training (2006a), and The Japan Institute for Labour Policy and Training (2006b).

reduced or eliminated the age and seniority elements as wage determinants. Moreover, many companies have applied the "elimination of raises based on job competence" as well as the "elimination of skill-based wages," clearly distinguishing ability growth from performance.

In other words, one could point out that Japan is ridding itself of the seniority principle and the ability development principle to create a foundation for compensation based on *Seikashugi*. As a result, the fundamental mechanism of employee assessment and wage determination that companies in this country have been cultivating since the war has been undergoing dramatic changes.

Second, 2) Proportional wage costs in accordance with performance means that many companies are intentionally introducing a mechanism linking an employee's short-term performance to wages in an unconventional manner, and they have begun increasing the degree to which wages are calculated based on short-term performance. An ideal example reflects the introduction of an annual salary system where the variability therein is increased through bonus assessments and performance-based bonuses based on departmental performance. The result is an intentional increase in the wage differential. In other words, *Seikashugi* assessment and reform of the compensation system as a mechanism aims to shift to an assessment and compensation system where assessment and wage differentials can be increased.

Third, 3) Strict and precise assessment refers specifically to the mechanism for introducing a management-by-objective (MBO) system to measure performance, and an annual salary system emphasizing short-term performance as a wage determinant. This involves not only assessing a superior's prior management of achievements and performance in the office, but also advancing it to the point of a wage system. Consequently, the simplest definition of *Seikashugi* is the mechanism "to determine wage and bonuses based on work performance."

As mentioned above, it can be said that *Seikashugi* in Japan comprises three principles: 1) Weakening of a seniority structure, and an ability development structure, 2) Proportional wage costs in accordance with performance, and 3) Strict and precise assessment.

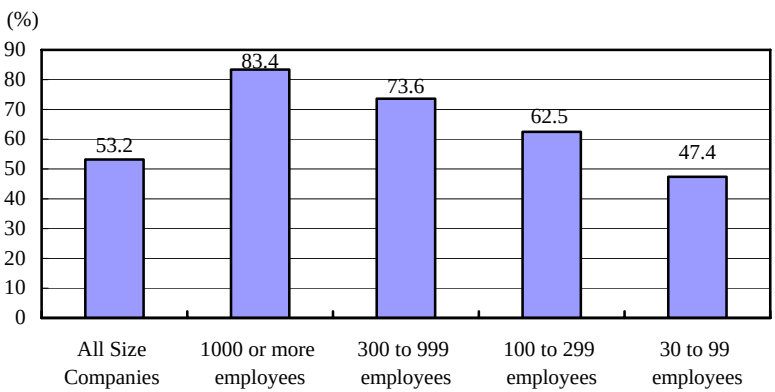
III. The Current Status and Criticisms of *Seikashugi*

1. The Current Status of *Seikashugi*

According to the Ministry of Health, Labour and Welfare, "The Labor

Situation in Japan and Analysis: General Overview" (see Figure 1) in 2004, the proportion of companies "reflecting individual achievement in employee wages" is 53% in all size companies, and the larger the company the stronger the trend, with companies of 1,000 or more employees reaching 83%. If *Seikashugi* were to be introduced in companies already reflecting individual achievement in employee wages, one could claim that *Seikashugi* is growing in popularity, particularly in major companies. Moreover, according to the JILPT corporate survey more than half, that is 57%, of companies that answered the questionnaire had introduced *Seikashugi*. These results reflect a trend based on the size of company, where the larger it is the higher the rate of introduction; a result that is nearly identical to existing surveys including one conducted by UFJ General Research Institute in 2004.

Figure 1. The proportion of companies "Reflecting individual achievement in employee wages"



Source: The Ministry of Health, Labour and Welfare, *The Labor Situation in Japan and Analysis: General Overview 2004.*

2. Criticism of *Seikashugi*

Seikashugi is growing in popularity, but criticism against it has also been growing rapidly since the publication of the best-seller by Jo (2004). This book is an inside report by a former employee and retired Personnel Department Chief of a major company referred previously as Company A. As noted earlier, this company had not only introduced *Seikashugi*, but was a pioneer in the introduction of *Seikashugi*. It was nevertheless faced with various difficulties

at the time of introduction and underwent a trial and error process. According to the report, during this process employees lost ambition and the vitality of the organization diminished. Furthermore, Yanashita (2001) wrote about a successful example of *Seikashugi* introduction in a major pharmaceutical company. During the trial and error process Yanashita generated rules for success such as 1) Introducing *Seikashugi* together with management reform, 2) Emphasizing MBO (introducing MBO among management staff, etc.), and 3) Transparency in assessment to ensure understanding.[6] These three points represent precisely the areas where *Seikashugi* draws criticism.

In addition to Jo (2004), which pointed out the reality of the situation, and Takahashi (2004) drew attention in academic circles with the issues they raised in their works. There are two aspects to Takahashi's (2004) chief criticism of *Seikashugi*, one of which is mainly a psychological aspect based on the research of Deci (1975) who states 1) The more opportunity one has to decide one's work, the greater the satisfaction, and 2) External rewards dictate the degree of self- determination (self-motivation), etc.[7] Deci offers a definition of self-motivated action as "an action wherein the person engaged considers himself capable and self-determined." Deci criticizes that with *Seikashugi* there is a low degree of self-determination that causes a drop in the level of satisfaction and subsequently in the morale of each individual.

Moreover, Takahashi (2004) criticized *Seikashugi* from the perspective of its flawed disregard for "weight on the future" that encourages a person not to be opportunistic and draws a time line into the future. He bases these criticisms on 1) Axelrod (1980a, 1980b) who evolved the old game theory from the perspective of cooperation and his own, 2) "future inclination principle" (1997).

Based on such arguments, prolonged competition necessitates "cooperation" in order to sustain success; however, in *Seikashugi* where short-term work results are linked to assessment and compensation, there is no means of obtaining any resultant "cooperation" or long-term success. Takahashi's "future inclination principle" suggests that long-term relationships between companies

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[6] Higuchi (2006) organized opposing points in the assessment of *Seikashugi* into 1) input assessment vs. output assessment, 2) absolute assessment vs. comparative assessment, and 3) plus assessment vs. minus assessment.

[7] Kohn (1993) reviewed the research alleging that wages determined by business results performance do not improve productivity.

and individuals are the key to providing companies with positive business results. He insists that if companies introduce *Seikashugi* to improve performance, they will never obtain their goal.

Aside from the above, there are three additional criticisms of *Seikashugi*.

The first is criticism from the point of harmonizing Japanese employment practices and business strategies primarily designed for manufacturing. It is a requisite to retain highly skilled workers in Japanese companies when their business strategy is primarily designed to produce high-quality goods that other companies cannot imitate. Cultivating such highly skilled workers necessitates skill formation and ability development within the company while also maintaining long-term employment relationships. The more specific the skill is to the company, the larger the degree of differentiation with other companies; herein lies the source of competitiveness.

It can also be said that the seniority-based wage system typically found in Japan and the ability-based grade system,[8] which is the advancement of the seniority-based personnel system, are consistent with this business strategy. Also, many major companies have offered support based on the personnel system, assessed and compensated workers over the long-term, and supported their growth and ability development while applying an ability-based grade system over the long-term. This confirms that intellectual skill, as shown in the research of Koike (1991a, 1991b), has typically been the source of competitiveness for major companies in Japan.

Seikashugi style assessment and compensation, however, reflects the recent business results of short-term work and is said to be contradictory in nature to a system that generates long-term assessment and ability development. This means a lack of long-term expectations for workers, which breaks any psychological contract and may cause a negative influence on the perception and ability development of workers. In this light, *Seikashugi* with its emphasis on the assessment of short-term business results is criticized as being out of touch with management strategies designed primarily for manufacturing.

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[8] It was not until the report on merit-based personnel system management by Nikkeiren in 1969 that the ability-based grade system derived from a merit-based personnel system started spreading as the new assessment and compensation principle, replacing the pre-war seniority system that was based on age and years of service. For details, refer to the merit-based personnel system management report by Nikkeiren Noryokushugi Kanri Kenkyukai (1969).

The second criticism of *Seikashugi* is from the perspective of management reform. Based on companies that introduced *Seikashugi* comparatively early on, Takahashi (1999) summarizes the causes of failure in its introduction as a form of management reform into the following six points: 1) Failure due to bureaucratizing of the organization, 2) Failure due to overstressing the importance of monetary reward, 3) Failure due to retaining a seniority structure, 4) Failure due to excessive participation in and focus on system design, 5) Failure for having set a goal of reducing personnel expenses, and 6) Failure due to an inability to eliminate opposition.

The third criticism is that *Seikashugi* does not function when white-collar work, for which it is intended, is separated from management of work in the work places. From results of careful fieldwork and based on the preconception that to improve performance one must synchronize management of work and personnel management, Nakamura and Ishida (2005) and Nakamura (2006) point out that 1) When implementing *Seikashugi* rewards should not be determined solely based on financial indicators, and 2) Workers are unsatisfied if those non-financial indicators demanded by management of work are not included in *Seikashugi*'s assessment elements.[9]

In addition to the several criticisms mentioned above[10] is the rising concern for workers' perceptions of *Seikashugi*. As yet there has been little research done that focuses primarily on motivation. *Seikashugi* may not cause major changes in employee morale and motivation, which are often the primary reason for its introduction, and according to Morishima (2004) and the JMA Research Institute Inc. (2005)[11] the percentage of companies indicating a rise in employee motivation was at best 56%, with many companies not acknowledging any effect on motivation. Such results indicate a necessity for more comprehensive examinations of *Seikashugi* and employee perceptions and attitudes thereof. Thus, let us consider various aspects of *Seikashugi* from an employee perspective by using the above-mentioned JILPT data.

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[9] Based on a book review of Ishida and Nakamura (2005) by Imano (2005).

[10] For example, Morishima (2006) points out that *Seikashugi*'s lack of human resource cultivation is currently the major problem with its implementation.

[11] The Japan Management Association carried out a "Survey on *Seikashugi*" between November and December, 2004 intended for personnel departments, department heads, and employees of major companies in Japan (1,325 companies). As a result, it became evident that the introduction of *Seikashugi* does not have a negative effect on the organizational climate as had been indicated in recent years.

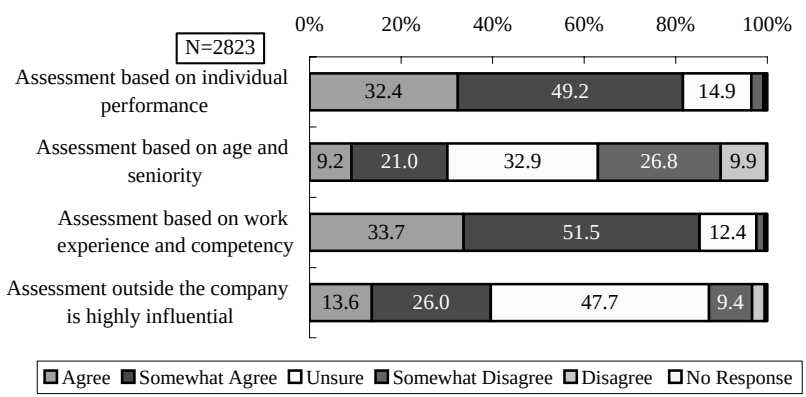
IV. *Seikashugi* from an Employee Perspective

1. General Attitudes toward *Seikashugi*

First of all, how do workers generally perceive *Seikashugi*? In the survey conducted by JILPT in 2001 (survey of 4000 men and women nationwide aged 20 years or more with a two-stage stratified sampling conducted using the Basic Resident Register), questions were posed after showing four kinds of resource distribution principles: the performance principle, effort principle, necessity principle, and equality principle. Among all survey respondents 83% agree with *Seikashugi*'s theoretical performance principle, which is described as "the higher the individual performance the higher the reward"; 83 % supported the effort principle—nearly identical to the performance principle ratio; 32% supported the necessity principle; and 20% supported the equality principle. The latter two cases showed a major disparity from the performance principle, indicating that many Japanese support the performance principle that corresponds to the basic philosophy of *Seikashugi*.

Next, using data from the JILP workers survey let us take a look at the assessment of *Seikashugi* based on general attitudes regarding how a worker's salary should be determined. Here it is important to note that the question was not how workers perceive the *Seikashugi* system in their own companies, but how it is perceived as a whole, including the opinions of those working in companies where it is not being implemented. The top bar on the graph in Figure 2 shows that in total over 80% agree or somewhat agree

Figure 2. General attitude toward methods for salary determination



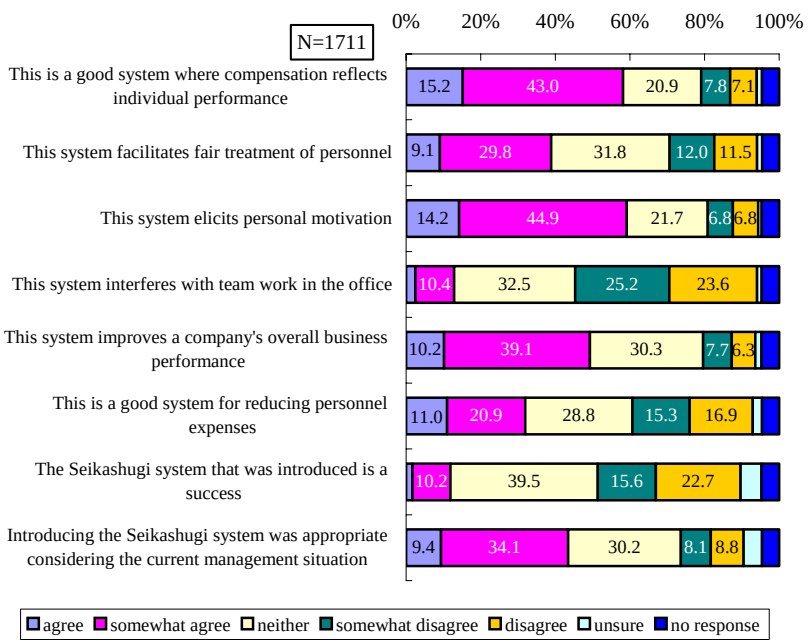
Source: JILPT workers survey

(hereafter, referred to as the "Approval Group") with *Seikashugi* wages described as "assessment based on individual performance." On the other hand, only a low ratio, that is 30%, of the Approval Group supported "assessment based on age and seniority." These results indicate that workers prefer *Seikashugi* to a mechanism where wage is determined by a seniority system. However, the ratio of the Approval Group supporting "assessment based on work experience and competency" exceeded 80%. Therefore, they highly favored assessment based both on performance as well as work experience and competency. In light of this, it is believed that workers prefer a wage system where rewards are given to highly competent individuals with satisfactory performance levels.

2. Assessment of the *Seikashugi* System in One's Company

How do employees feel about introducing *Seikashugi* in the company where they work? The assessment of such workers can be seen below:

Figure 3. Assessment of the *Seikashugi* system in one's company



Source: JILPT workers survey

First, we shall look at the positive assessments (refer to Figure 3). Within the Approval Group (total ratio of persons who "agree" and "somewhat agree") 60% agreed with the assessments, "This system elicits personal motivation" and "It is a good system where compensation reflects individual performance." Nearly half of the Approval Group agreed with the assessment, "This system improves business performance for society as a whole." In general, for the assessment, "This is a good system for reducing personnel expenses," the ratios of the Approval and Disapproval Groups ("disagree" and "somewhat disagree") were about the same, that is 31% and 32% respectively. In the assessment, "Introducing the Seikashugi system was appropriate considering the current management situation," the ratio for the Approval Group far exceeded that of the Disapproval Group at 43% to 16% respectively. However, in the assessment, "The Seikashugi system that was introduced is a success," the Disapproval Group's ratio of 38% far exceeded that of the Approval Group at 11%, indicating a grave assessment.

In other words, workers seem to agree with the specifics of *Seikashugi*, but disagree with it overall. This indicates that many workers support the introduction of *Seikashugi*, but disagree with how it is being implemented in their companies. These results also suggest that the introduction of *Seikashugi* may have some influence on labor-management relations.

3. Problems Regarding *Seikashugi* in One's Company

What problems arise for workers when *Seikashugi* is implemented in their company? Looking at those items assumed to be problematic, the "somewhat agree" and "agree" group (hereafter, referred to as the "Problem Group") (see Figure 4) who fault the system with the assessment, "There are some sections where business performance is difficult to measure," comprise a total ratio of 80%. Furthermore, in the assessment, "There are variations in assessments according to assessor," the Problem Group's ratio exceeds 70%. This suggests that an assessor's personal intentions and assessment skills may influence the outcome of the assessment, and the issue concerning the difficulty of "criticizing another person" is also drawing the attention of many workers.

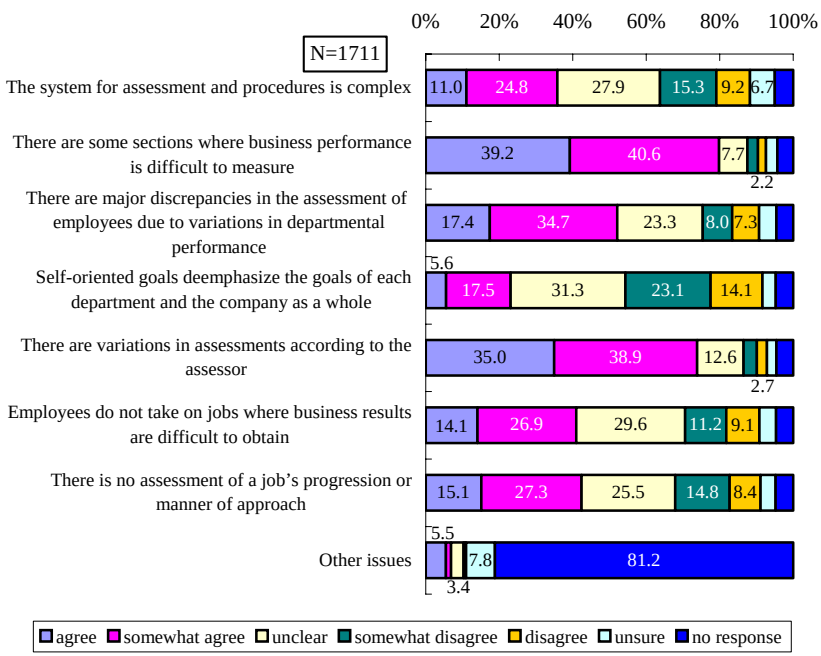
Moreover, over 50% of the Problem Group agrees with the assessment, "There are major discrepancies in the assessment of employees due to variations in departmental performance."

A number of the companies that introduced *Seikashugi* have corrected the

discrepancy in individual compensation levels due to variations in departmental performance; however, workers consider it to be a major problem in cases where the discrepancy is not adjusted. Workers are calling for an impartial system that eliminates any discrepancies from opportune or inopportune placement in a company.

Furthermore, 30% to 40% of the Problem Group indicated, “There is no consideration on a job’s progression,” “Employees do not take on jobs where business results are difficult to obtain,” and “The system for assessment is complex.”

Figure 4. Problems implementing the *Seikashugi* system in one’s own company



Source: JILPT workers survey

V. *Seikashugi* and the Wage Differential

1. Systematic and Operational Discrepancies

First is the question concerning whether *Seikashugi* will actually increase the salary differential, which we will confirm using the JILPT company survey.

In this survey, answers were obtained by index concerning the existence of an annual income differential among section chief level employees in the same department. With a standard of 100 we obtained the approximate maximum and minimum levels of the potential differential due to the system, as well as the real annual income differential. In other words, assuming an average value of 100 we were able to grasp the maximum (larger than 100) and minimum values (smaller than 100) for potential (systematic) and actual (operational) differentials respectively. Here the differential is defined as the difference of the maximum and minimum values. A Systematic Differential A (maximum minus minimum) and Operational Differential B (maximum minus minimum) were obtained. First, looking at the Systematic Differential A, the average minimum value was 81.3 and the maximum value 121.9. The average annual income differential varied at approximately 20% above and below the average. Furthermore, the actual Operational Differential B had an average minimum value of 85.5 exceeding the systematic differential, and an average maximum value of 117.0 that fell below the systematic differential.

In other words, the annual income differential for companies targeted in the survey showed an operational differential lower than that of its system design. Despite the fact that it goes against principle for an operational differential to exceeded the system, it seems to be the basic stance of Japanese companies not to fully utilize this system but rather to set the differential within it.

We must then ask ourselves if the introduction of *Seikashugi* has caused a rise in systematic and operational differentials. Using the JILPT corporate survey, it is clear by looking at the results of the multiple regression analysis where the controls were industry and size that both systematic and operational differentials are higher in companies that had introduced *Seikashugi* than in those that had not. Statistical analysis also confirms the accuracy of the general opinion that "*Seikashugi* increases the wage differential."[12]

2. Increased Differential and Employees' Satisfaction

Now let us examine the relationship between the systematic and operational differentials obtained from the JILPT corporate survey and the satisfaction of employees. First, as basic information, the JILPT workers survey respondents

[12] Refer to JILPT (2005), 153-54. These facts support all three requirements for *Seikashugi* as introduced by Okunishi (2001), cited in footnote 3.

the introduction of *Seikashugi*.

Next we shall consider whether the wage differential caused by *Seikashugi* is related to a decrease in satisfaction. To understand this relationship Table 1, 2) "Changes in your satisfaction of the reflection of assessment on wage and bonuses," was used to conduct a logistic regression analysis with a response of "decreased" assigned a value of 1 and all other responses assigned a value of 0. Explanatory variables used include the above-mentioned "potential (systematic) wage differential" and "actual wage differential."[14]

Table 2. Analysis of decreases in satisfaction and the wage differential (Logistic regression analysis, standard error in parenthesis)

	Total sample (N=1,613)		Employees of companies which are taking measures to ensure employees' satisfaction (N=1,013)		Employees of companies which are not taking measures to ensure employees' satisfaction (N=600)	
A. potential wage differential	.007*** (.002)	---	.004 (.003)	---	.010* (.006)	---
B. actual wage differential	---	.011*** (.003)	---	.006 (.004)	---	.019*** (.006)
-2 log-likelihood, PseudoR^2 (Cox & Snell)	1776.291 .062	1883.351 .063	1191.051 .079	1183.808 .083	559.792 .071	653.660 .095

Source: JILPT corporate survey

Note: Refer to footnote 14 for control variables *0.05 < p < 0.10, **0.01 < P < 0.05, ***p < 0.01

Results are shown in the leftmost row of Table 2 and appear to indicate a decrease in satisfaction of the reflection of assessment on wage and bonuses in accordance with a rise in the potential differential and actual differentials.

However, since the differential and fluctuations cause a loss of employees' satisfaction and motivation, the increase in wage differential and fluctuations alone are not sufficient conditions. At the same time, one cannot simply be

[14] In addition to this control variable, the sex, age, seniority, academic background (university degree holder?), rank (above director, section chief, assistant manager, other), annual income, working hours (average actual working hours per week based on June 2004 statistics), industry (11 dummy variables), number of full-time employees, company achievement record (upward or downward trend, other), labor union and listed company dummy were utilized as variables (For detailed results, please contact the authors).

content with the wage differential. To that end, in many cases a company's personnel management will introduce a "set of three" evaluation system changes when introducing *Seikashugi* in order to increase the fairness of the assessment system: "MBO", "disclosure of assessment results to the person in question," and "assessor training." The rationale behind this is that individuals are more accepting of some degree of differential and fluctuation in wages and assessment in the *Seikashugi* system when there are sufficient measures in place for ensuring fairness.[15]

For the purpose of this report we took samples of companies considered to have executed "sufficient measures for ensuring fairness of the assessment," or those that have executed two or more of the three measures for ensuring fairness of the assessment. They were then separated from companies without sufficient measures and both were analyzed based on the same model. The analysis of circumstances at the introduction of measures for ensuring fairness of the assessment is shown in Table 3. Data concerning the measures for ensuring fairness of the assessment was obtained from the above-mentioned JILPT corporate survey.

Table 3. Circumstances at the introduction of measures for ensuring fairness of personnel assessment

	Proportion of "Being Implemented" (%)		
Did your company introduce the following measures concerning employee assessment?	Total (N=2,699)	Introduction of Seikashugi (N=1,526)	Others (N=1,173)
1) MBO	64.1	65.2	34.8
2) Disclosure of assessment results to the person in question	48.4	60.0	40.0
3) Assessor training	49.4	55.8	44.2
4) Implemented at least two of the above-mentioned measures	55.9	66.6	33.4

Source: JILPT corporate survey

[15] This view is based on organizational justice research. See to Folger and Cropanzano (1998) and Greenberg and Colquitt (2005) for details regarding organizational justice and human resource management.

were asked about any changes in their satisfaction toward the assessment and compensation system over the past three years. The results are shown in Table 1.

Table 1 shows the ratio of persons indicating a decrease in the past three years in satisfaction concerning the reflection of personal assessment on wage and bonuses was as low as 31%, and the ratio of persons indicating a decrease in satisfaction concerning the assessment of their work and ability at 22%. There was also no remarkable decrease in other satisfactory opinions.

Table 1. Changes in satisfaction toward the assessment and compensation system over the past three years

	Percentage of "Decrease" (%)		
Over the past three years has there been a change in your satisfaction regarding compensation or assessment?	Total (N=2,699)	Introduction of *Seikashugi* (N=1,526)	Others (N=1,173)
1) Changes in your satisfaction of business results and ability assessment	22.2	22.9	21.2
2) Changes in your satisfaction of the reflection of assessment on wage and bonuses	31.0	32.0	29.6
3) Changes in your satisfaction of the assessment of efforts to achieve goals	20.4	21.2	19.4
4) Changes in your satisfaction of personal assessment and compensation when compared with the assessment and compensation of others	22.3	23.5	20.8

Source: JILPT workers survey

It is important to note that a decrease in satisfaction is not conclusively linked to the introduction of *Seikashugi*. These figures do not create the impression that there are many complaints concerning wage or assessment or that there was a significant decrease in satisfaction of those companies that responded to the survey.[13] Moreover, there appears to be no relationship with

[13] The degree of satisfaction with wages, however, is lower than that of satisfaction with and criticism against the assessment and treatment. In the individual questionnaire forms, questions were posed regarding changes in wage satisfaction over the past three years and rated on a one- to-five point scale. 53.8% (1,719) of respondents indicated that they were unsatisfied or somewhat unsatisfied.

The analysis results for the status of companies at the introduction of measures for ensuring employees' satisfaction are shown in the two rightmost rows of Table 2. As expected, in companies with sufficient measures for ensuring employees' satisfaction, an increase in the wage differential did not correlate with a decrease in the perception of employees' satisfaction concerning the reflection of performance assessment on wage and bonuses. These results indicate that, in short, satisfaction for employees in companies that seek to make them more receptive to the wage differential differs from that in companies that do not.[16]

VI. Effect of *Seikashugi* on Workers' Perceptions

What effect does *Seikashugi* have on an employee's commitment to or satisfaction with their company? Here, we verify the assumption that introducing *Seikashugi* has a negative effect on workers' perceptions.

1. Can One Work for the Same Company until Retirement?

The perception is that workers seek to deepen feelings of unity with their company and strongly desire to remain working at that company until retirement under the customary practice of lifetime employment, a key feature of Japanese employment practices. One must then consider whether the introduction of *Seikashugi* has an effect on such perceptions. The following is a statistical analysis using data from the JILPT workers survey.

With the "lifetime employment-oriented dummy" as the outcome variable representing cases where respondents indicated, "I could work for this company indefinitely" or "I plan to work on external assignments or switch companies before I retire," a logistic regression analysis was conducted using the dummy variable to indicate the introduction of *Seikashugi* as the explanatory variable (see Table 4). Here, the effect of introducing *Seikashugi* is measured by limiting the target of the analysis to a 1985 case of workers in companies indicating, "We hope to maintain long-term, stable employment for our employees for as long as possible."[17]

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[16] Since 2000, employees' satisfaction has decreased significantly more in companies implementing *Seikashugi* than in those that were not. However, when the samples were separately analyzed, in neither sample was a significant link found between the introduction of *Seikashugi* and the decrease in satisfaction.

[17] Control variables include male sex, age (logarithm), university graduate, seniority (logarithm), industry, and number of full-time employees (logarithm).

Table 4. Results of logistic regression analyses with the lifetime employment-oriented dummy as the outcome variable

	Standardized coefficient	Standard error	Significant probability	Odds ratio
Companies that introduced *Seikashugi*	-0.264	0.111	0.017	0.768

N = 1985, -2Loglikelihood = 2242.840, Pseudo R^2 (Nagelkerke R^2) = 0.277

These results indicate a negative effect on lifetime employment aspirations in companies that introduced *Seikashugi*. In other words, results of the regression analysis show that in companies declaring, "We hope to maintain long-term, stable employment for our employees for as long as possible," the number of workers indicating, "I could work for this company indefinitely" was lower in companies that had introduced *Seikashugi* than in those that had not. This may be due to the fact that introducing *Seikashugi* generates insecurity in employee perceptions with respect to both wages and employment. In existing research in psychology, sociology, and business economics, it is believed that a "Psychological Contract" is an implicit contract made between a company and its workers. For example, workers form long-term relationships through their employment. Morishima (1996) also points out that relationships of mutual trust have been cultivated through long-term employment. However, in contrast with long-term employment, seniority-based wages—wherein merit is bestowed through long-term relationships, disappear with the introduction of *Seikashugi* at which point workers tend to grow concerned that the matter of long-term employment conveyed in their contract will also be annulled. As Rousseau (1995) suggests, such a change could potentially alter the relationship between a company and its workers from relational to transactional.

2. Changes in Commitment Associated with the Introduction of *Seikashugi*

Among worker's perceptions, we shall focus here on commitment as being the most influenced by the introduction of *Seikashugi*. In the JILPT workers survey, questions were posed using the semantic differential scale where, along with classifying the commitment, it is placed in one of five levels; that is, the higher the commitment the more points allotted. Here the following three types of commitment were set up as pragmatic commitments:[18] 1) "I want to

[18] Here we focus on the pragmatic and affective commitments that Takagi (2003)

continue working for this company because the salary and compensation are consistent with my performance," 2) "I want to continue working for this company because the more I work the more I will progress," and 3) "I want to continue working for this company because my work is challenging". The following two commitments were added as affective commitments: 4) "I am twice as devoted to the company as others," and 5) "For the good of the company I will do my best no matter what the work or where." We conducted an ordered logit analysis by setting up these commitments as outcome variables in order to measure the influence of the explanatory variable, *Seikashugi* (see Table 5).[19]

These results indicate that statistically the introduction of *Seikashugi* causes a significant negative influence on all five commitments. In other words, there was a significant decrease in both the pragmatic and affective commitments with the introduction of *Seikashugi*.

It is important to note that, as mentioned above, the introduction of *Seikashugi* caused a negative effect on lifetime employment aspirations within that company. When long-term employment and *Seikashugi* are introduced as a set, however, the commitment "I want to continue working for this company because the more I work the more I progress" is the only among pragmatic commitment that statistically is significantly higher. In short, the perception that it is possible to continue working for a company until retirement has waned; however, when *Seikashugi* is applied under the long-term employment

established by organizing early research by Allen and Mayer (1990) etc.

[19] Control variables are the same as in footnote 17. The test result are as follows:

1) N=2401 -2log likelihood=6547.8, chi-square value=86.1, significance probability =0.000, goodness of fit (Pearson chi-square value=8742.2 significance probability =0.213), PseudoR^2 Nagelkerke=0.040, Macfadden=0.013,
2) N=2401 -2log likelihood=6477.1, chi-square value=79.3, significance probability =0.000, goodness of fit (Pearson chi-square value=8671.7, significance probability= 0.469), PseudoR^2 Nagelkerke=0.037, Macfadden=0.012,
3) N=2401 -2log likelihood=6485.0, chi-square value=92.9, significance probability =0.000, goodness of fit (Pearson chi-square value=8761.6, significance probability= 0.224), PseudoR^2 Nagelkerke=0.043, Macfadden=0.014,
4) N=2401 -2log likelihood=6603.6, chi-square value=242.1, significance probability =0.000, goodness of fit (Pearson chi-square value=8630.5, significance probability= 0.593), PseudoR^2 Nagelkerke=0.108, Macfadden=0.036,
5) N=2401 -2log likelihood=6808.2, chi-square value=169.3, significance probability =0.000, goodness of fit (Pearson chi-square value=8578.38, significance probability= 0.580), PseudoR^2 Nagelkerke=0.077, Macfadden=0.025.

Table 5. The influence of *Seikashugi* on commitment（ordered logit analysis）

Commitment		Unstandardized Coefficient	Standardized Error	Significance Probability	Significance Level
pragmatic	1) I want to continue working for this company because the salary and compensation are consistent with my performance	-0.199	0.081	0.014	*
	2) I want to continue working for this company because the more I work the more I will progress	-0.243	0.081	0.003	**
	3) I want to continue working for this company because my work is challenging	-0.228	0.081	0.005	**
affective	4) I am twice as devoted to the company as others	-0.232	0.081	0.004	**
	5) For the good of the company I will do my best no matter what the work or where	-0.364	0.081	0.000	***

Source: JILPT workers survey
*0.05 < p < 0.10, **0.01 < P < 0.05, ***p < 0.01

system workers realize that the longer they work the more they will progress.

3. The Introduction of *Seikashugi* and Workers' Overall Job Satisfaction

We may wonder if a worker's overall job satisfaction will be influenced as a result of introducing *Seikashugi*. Thus, we conducted a multiple regression analysis using data from the JILPT workers survey, with a worker's overall job satisfaction as the outcome variable.[20] At the time of the survey the change in the sales of the company over the past five years, the worker's sex, age

[20] The degree of satisfaction is separated into five levels; the higher the score, the higher the level of satisfaction.

(logarithm), academic background, seniority (logarithm), industry, and the number of full-time employees (logarithm) were added as control variables.[21] The result showed that statistically the introduction of *Seikashugi* did not have a significant influence on a worker's overall job satisfaction.

On the other hand, let us also address unexpected results. For our research purposes, we divided the companies into four categories using results from the JILPT corporate survey. Each company's employment system was placed on two axes, one being prior and post-introduction of *Seikashugi* and the other the maintenance or elimination of long-term employment. Table 6 shows the results of the analysis[22] wherein these categories were used as explanatory variables.

Table 6. Influence on degree of overall job satisfaction as indicated using a dual axes model of *Seikashugi* and long-term employment (OLS regression)

	Unstandardized Coefficient	Standardized error	Significance Probability	Significance Level
Japan (long-term employment +non-*Seikashugi*)	-0.062	0.076	0.415	
New Japan (long-term employment +*Seikashugi*)	-0.095	0.077	0.220	
America (non-long-term employment+*Seikashugi*)	-0.192	0.091	0.035	*

N=2037 *** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$ adjust $R^2 = 0.028$
Significance probability for analysis of variance=0.000 F Value=3.827
Note: Analysis of companies from 1999 that introduced *Seikashugi* and those that did not.

The American model, where non-long-term employment (elimination of the long-term employment) and *Seikashugi* were introduced in combination, was the only model with a statistically significant influence on overall job satisfaction. In other words, it became clear that the overall job satisfaction of workers in American model companies was low. *Seikashugi* itself does not have a statistically significant relationship to overall job satisfaction.

[21] The results of the JILPT corporate survey confirmed that company performance tends to be higher in companies implementing *Seikashugi* than in those that are not. Analysis adding the change in sales as a control variable was conducted to eliminate a spurious effect where satisfaction was influenced not by the introduction of *Seikashugi*, but by the company's success that ensued.

[22] The control variables are the same as in footnote 21.

However, a workers' overall job satisfaction decreases when *Seikashugi* and "elimination of long-term employment" are introduced concurrently. These results suggests that further mobilization of the labor market will lead to a decrease in the number of companies maintaining long-term employment, and subsequently cause a decrease in workers' satisfaction presumably related to leaving one's job.

VII. Conclusions—*Seikashugi* from an Employee Perspective

In this paper, the following analysis was conducted on "employee" perspectives of *Seikashugi*: 1) A worker's perspective of *Seikashugi*, 2) The influence on the worker's perceptions regarding *Seikashugi* induced wage differentials, and 3) The influence on the worker's commitment and satisfaction regarding *Seikashugi* subsequent to its introduction. The main findings are as follows:

First, the following three points became clear with analysis of employee perceptions of *Seikashugi*. 1) Many workers favor the concept of emphasizing business results, work experience and ability over using the seniority system as a wage distribution principle. 2) As for assessments of *Seikashugi* in one's company, many workers praised it by saying, "This system elicits personal motivation," "This system facilitates fair treatment of personnel," and "This system improves a company's overall business performance." Nevertheless, workers had doubts regarding the general question, "Is the *Seikashugi* system in my company working successfully?" Finally, 3) Many workers believe there are problems with *Seikashugi* in terms of assessment methods and application, and as a result many workers become dissatisfied with the system in its early stages.

Second, the following two points were distinguished through analysis of the wage differential. 1) An increase in the wage differential leads to a decrease in the satisfaction regarding the assessment of wage and bonuses. 2) On the other hand, in companies with sufficient measures for ensuring satisfaction, an increase in the wage differential does not lead to a decrease in the satisfaction regarding the assessment of wages and bonuses. In short, in terms of the wage differential fairness perceptions of employees in companies that seek to make them more receptive to the wage differential differs from those in companies that do not.

Finally, the following three points were gathered through analysis of the

Seikashugi system's influence on a worker's commitment and satisfaction: 1) Even in companies maintaining a long-term employment system, the introduction of *Seikashugi* generates insecurity among workers regarding sustainable employment. 2) The introduction of *Seikashugi* causes a drop in workers' pragmatic and affective commitments. However, when long-term employment and *Seikashugi* are introduced concurrently, the *Seikashugi* system boosts the commitment to workers that they will progress as they continue to work. 3) There is no relationship between the introduction of *Seikashugi* and workers' overall job satisfaction. The level of satisfaction decreases, however, when *Seikashugi* and "elimination of long-term employment" are introduced concurrently.

We gather from the above-mentioned results that among recent changes in human resource management in Japanese companies, the introduction of *Seikashugi* influenced workers in a manner never before witnessed. The time has come where reform occurs both within a company and a worker's lifestyle. Concrete analysis reveals that workers' lifestyles and mental status are becoming increasingly unstable. Further investigations are necessary regarding stable labor-management relationships and workers' lifestyles believed to be maintained by traditional Japanese employment practices. This problem cannot be solved with only the efforts of individual companies or workers, and requires constructive labor policy intervention. Our research has given us a glimpse into these major changes of the times.

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Employee Comprehension of Pay Systems

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1. Introduction

Combining human resources data on employees from a specific company with the results of a questionnaire completed by the same employees, this paper analyzes to what extent these employees accurately understand the human resources policies and compensation systems of their company. The paper also aims to identify the relationship between their relative positions or level of compensation and their knowledge of performance evaluation and compensation systems.

Japanese business firms have made varied and great efforts in order to climb out of recession. As indicated by the fact that many extensive discussions have been held concerning performance-based pay systems, changes in human resources policies have been incorporated in the improvement of management culture, aiming at heightening employees' desire to work. However, the criteria for new employee appraisal systems or changes to appraisal systems have not always been reflected in the actions of the employees as originally intended. This is because several steps need to be taken in order to shift the actions of employees in a desired direction.

The first appraisal conducted by the immediate supervisor of an employee on the basis of his/her performance usually passes through the first and second adjustment stages and continues to the final appraisal. Then, this final appraisal is factored into the salary of the employee, based on wage tables and wage determination formulas. Evaluating supervisors or human resources agents sometimes make adjustments at the stage of authorization of appraisals or promotions. However, in most cases, the salary of each employee is determined through the aforementioned procedures. This results in the formation of wage structures characterized by seniority pay or wage disparity, which are visible in an overview of all employee wages. Meanwhile, each employee understands the wage tables and wage determination formulas, and grasps the relationship between work effort and salary through information related to their own salary and evaluation as well as salaries paid to coworkers; then with this information each employee determines the level of his/her effort and way of work.

An important point to consider is that changes in employees' work mentality,

in many cases, result from changes in their awareness of their external environment. Their judgments depend on the information that they have retained and the awareness that they have formed for themselves and their environment on the basis of such information. In other words, the elements that determine their behavior are the knowledge and awareness that they have concerning human resources policies and wage structures, as well as the actual status of each.

Therefore, during the intermediary stage of a change in human resources policies to a change in work mentality and effort, there may be some problems in which an employee's awareness of the guidelines under which he/she should work or act is not always in harmony with the actual intentions of the company. No matter how the system is changed, his/her effort and way of work cannot be changed unless perceptions are also changed. Moreover, if employees have misconceptions concerning their human resources policies, changes in the policies may result in a response not originally intended. Conversely, if employees assume that the system has been changed, regardless of whether a change in the system is unsuccessful or no changes were made in the first place, some changes may still appear in an employee's effort. Considering this point to be important, this paper measures to what extent employees accurately understand human resources policies and pay systems and to what extent their knowledge deviates from the actual intentions of the company.

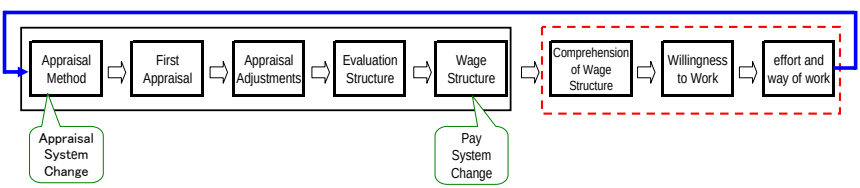
2. Earlier Studies and Positioning of This Paper

Attempts have already been made to analyze both the results of a series of renovations to human resources policies, called the performance-based pay system, and the effects that such renovations have had on one's willingness to work and motivation in the workplace. However, few attempts have been made to analyze the deviations between the institutional structure of pay systems and employee awareness of these systems.

These studies can be roughly divided into two categories. As shown in Figure 1, one category is those that attempt to analyze the process as it moves from first appraisal to final appraisal, and ultimately to the determination of wage structures in which the final appraisal is reflected. A recent and remarkable trend is that several analyses have been made using highly reliable individual human resources data from the human resources departments of various business firms. The analyses made by Tsuru, Abe and Kubo in 2003 and by Nakajima,

Matsushige and Umezaki in 2004 can be raised as examples of recent studies. Using the data accumulated over a period of many years to make estimations, the former group points out that in some business firms the introduction of new evaluation systems weakened the seniority system, resulting in increasing wage gaps. Comparing the wages that were put into effect by a business firm before and after introducing a new evaluation system, the latter group observes that this change not only increased the weight of seniority but also narrowed wage gaps in the manager class where annual salary systems had been introduced. Analyzing the procedures for employee evaluation adjustments, Umezaki, Nakajima and Matsushige jointly clarified in 2003 that "hierarchical evaluation" (namely, the degree of involvement of third parties or a senior manager in the employee evaluation adjustments) played an important role in determining wage gaps.

Figure 1. System change and work methodolgy



Genda, Kambayashi and Shinozaki jointly tried in 1999 to clarify the relationship between the introduction of performance-based systems and motivation in the workplace. Morishima (1997/1999), Fujimura (1998) and Tsuru (2001) point out in their respective papers that it is necessary to improve the fairness of the employee evaluation adjustment process and the clarity of the evaluation in order to have employees readily accept the "performance-based" pay system. The information used in these studies is, however, based on the questionnaires. Since the employee questionnaires can be said to be a survey on the subjective understanding of employees, the studies can be regarded as the analyses of the relationship between their knowledge and their effort and way of work.

However, there is no research on the means of connecting the research of these two groups, namely, research between the wage structures currently adopted by business firms and the wage structures understood by employees.

The studies conducted by Abe in 2000, Tsuru in 2001 and Ohtake and Karato in 2003 already point out that not all of the employees objectively and accurately grasp the actual status of their own salaries. For example, the results of verification made by Tsuru (2001) illustrate that the subjective awareness of wage gaps is not linked to motivation in the workplace. Moreover, Abe (2000) points out that when system changes are not relayed to employees these changes do not lead to any improvements, which is expected but meaningful nonetheless. These studies, however, have not analyzed to what extent awareness deviates from the actual conditions. As far as I know, only The Japan Institute for Labour Policy and Training (2006) has identified the deviations existing in the understanding of performance evaluation systems and verified relationships between the deviations and the performance of business firms. This study, therefore, can be said to be worthy of special mention. The study, however, has not analyzed to what extent the individual employees of a business firm understand their own evaluations and relative positioning.

Such being the case, I will confirm whether deviations in the awareness of employees concerning the human resources policies can be identified by any data other than those used by The Japan Institute for Labour Policy and Training (2006). Then, I will investigate to what extent individual employees understand their salaries and positioning within the organizations of their company. Finally, I will investigate the elements that determine the accuracy of their perceptions.

3. Degree of Understanding

In this section, I will confirm deviations in employee awareness of human resources policies by using a combination of data from the actual employment management survey (company survey) titled “1995 Fiscal Year, Report on Employment Upgrading Promotional Business for Pharmaceutical Manufacturing Industry (1996)” and the data of an employee awareness survey. Additionally, I will survey the degree of employee awareness and the accuracy of their perceptions of human resources policies through utilization of the employees-related micro data from the human resources department of a business firm, as well as the data obtained through the employee questionnaire survey.

3.1. Data Related to Pharmaceutical Manufacturing Industry

Table 1 shows the figures obtained through the calculation of employee awareness deviations concerning human resources policies. The survey used

for the "1995 Fiscal Year, Report on Employment Upgrading Promotional Business for Medical Manufacturing Industry (1996)" was conducted in 1995. The "company survey" is based on the questionnaires that were distributed to and collected by mail from 230 member companies of The Pharmaceutical Manufacturers Association of Tokyo and 270 member companies of The Osaka Pharmaceutical Manufacturers Association. The number of companies that provided valid responses was 310, while the response rate was 62.0%. The "employee survey" is based on questionnaires that were distributed to and collected through companies from 5,000 regular employees working for the 120 companies that provided valid responses and that were engaged mainly in medical products manufacturing. The questionnaires were answered by 3,462 employees of 102 companies, and the response rate was 69.2%.

Analyses have been conducted concerning the annual salary system, which is closely related to the "performance-based" evaluation system, and the introduction of objectives management. A cursory review reveals quite substantial deviations. Particularly, the employees understand that the performance-based evaluation system has already been introduced by their companies more extensively than the employees think.

Table 1. Employee awareness deviations concerning human resources policies in the pharmaceutical manufacturing industry

1) Annual Salary System

		Employee Awareness (Employee Survey)		N=3020
		Believe a System Has Been Introduced	Do Not Believe a System Has Been Introduced	Total
Responses from Human Resources Staff (Company Survey)	Companies Which Have Introduced Systems	85.6	14.4	100.0
	Companies Which Have Not Introduced Systems	79.0	21.0	100.0

2) Objectives Management

		Employee Awareness (Employee Survey)		N=3020
		Believe a System Has Been Introduced	Do Not Believe a System Has Been Introduced	Total
Responses from Human Resources Staff (Company Survey)	Companies Which Have Introduced Systems	81.4	18.6	100.0
	Companies Which Have Not Introduced Systems	81.5	18.5	100.0

3.2. Analysis Using the Micro Data Related to Employee Management

Next, I will analyze the human resources data of a business firm concerning the salaries paid by the firm for four fiscal years from 1999 to 2002 in conjunction with the employee questionnaire survey results.

The company targeted by this survey is a manufacturing company with more than 1,000 employees. The average age of all of its employees is approximately 38 as of the fiscal year 2002, while the average length of service is a little less than 15 years. This company has a labor union; however, it does not belong to any larger union organizations. The company has thus far kept a relatively cooperative relationship with the union. The business performance of the company was stable for several years before the survey was conducted. Their annual sales have steadily increased in the recent six years.

The above micro data includes information such as salaries, age, years of service, sex, and whether work responsibilities are considered comprehensive or clerical in nature. This survey, however, focuses only on said comprehensive employees as it is necessary to limit the coverage to those employees working under similar treatment scheme. Their annual salary is composed of a monthly salary, summer bonus, winter bonus and account-settlement bonus. The monthly salary is further divided into a fixed salary and non-fixed salary. The fixed salary is composed of a basic salary and allowances. The basic salary is composed of a personal salary (age salary plus service salary) and a qualification-based salary. For this analysis, I will use the basic salary.[1]

The employee questionnaire survey was carried out by the human resources department in March and April of 2003 in order to identify the awareness level for all of the general managers, section managers and other lower-class employees. The response rate was approximately 68%. This survey was conducted in such a manner as to allow the data collected through the survey

[1] This performance evaluation system is based on the same qualification scheme as that of many Japanese companies. In this scheme, clerical employees are classified into classes from one to four, while comprehensive employees are classified into classes from one to ten. Comprehensive employees, which are the subject of this analysis, are evaluated from the perspective of their organizational status. Classes one to six are for general employees, classes seven and eight are for managers, and classes nine and ten are for general managers. The employees who begin working immediately after graduation from their 4-year university are treated as class three. The age salary stops increasing at the age of 50 and slowly decreases from the age of 55. The service salary is no longer provided after the age of 55.

to be matched with the human resources data of the company.

3.3. Accuracy of Perceptions Regarding Human Resources Policies

The accuracy of employee perceptions regarding human resources policies has been measured by eleven questionnaire queries concerning human resources policies. The contents of the questions are the same as those explained in the training seminars related to the human resources policies of the company. Thus, the questions are related to topics of which employees are aware of to some extent. These topics are comprised of two items concerning basic salary, two items concerning an increase in the age salary[2], three items concerning bonuses, one item concerning promotion standards, two items concerning the performance appraisal system and one item concerning notes for the operation of objectives management.

The percentage of correct responses is illustrated in Table 2. The percentage of correct responses concerning questions about performance appraisal is comparatively high. However, the percentage concerning basic salary is extremely low, while the percentage concerning bonuses is as low as approximately 50%. Since the difficulty of the content of the questions varies from one to another, each difference in the percentage of correct responses is not directly related to the exactness of their knowledge or the degree of their interest. However, considering that the questions are related to quite basic matters, I cannot say that they are fully aware of their human resources policies.

Those employees answering all questions provided, on average, 7.0 correct responses to the 11 questions (percentage of correct responses: 63.3%). As for the employees who answer some but not all of the questions, if you determine that they were unable to answer such questions their percentage of correct responses becomes 5.6 on average (51.2%). This rate is very low. Also, from this point of view it is difficult to say that the accuracy of their perceptions regarding human resources policies is high.

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[2] Example: “The age salary stops increasing at the age of [ ].” “The number of months for bonus provision varies from [ ] to [ ] depending on the performance evaluation.” As such, the contents are quite basic.

Table 2. Questionnaire response rates regarding human resources policies

	Correct Response Rate 1* (%)	Correct Response Rate 2** (%)
Question about the basic salary of manager classes	28.0	16.5
Question about the basic salary of general employees	24.7	20.5
Question about the age salary 1	69.1	61.3
Question about the age salary 2	69.3	61.7
Bonus calculation base	73.4	50.9
Minimum number of months for bonus provision	62.0	57.3
Maximum number of months for bonus provision	48.7	44.9
Requirements for promotion	95.1	89.1
Question about personnel appraisal 1	87.2	81.6
Question about personnel appraisal 2	64.7	61.1
Notes for the operation of objectives management	25.8	18.7
Average Rate for Correct Responses	63.3	51.2

* The number of employees who answered all of the questions is regarded as the total number of respondents

** The number of employees who answered any of the questions is regarded as the total number of respondents

3.4. Knowledge Regarding Wages

I also surveyed the degree of accuracy with which employees understand the level of the salaries actually paid to them, as well as existing wage gaps. The salaries that they expect to receive if they continue to work hard or that they would receive if they fail to move up to higher classes are directly related to what they want to be in the future. Therefore, it is not unusual to assume that their work is motivated by interest in these matters.

The questionnaire provides the following questions:

1. What do you think are the minimum and maximum amounts for a general manager's monthly, pre-tax salary?
2. What do you think are the minimum and maximum amounts for a 35-year old employee's monthly, pre-tax salary?
3. What do you think are the minimum and maximum amounts for a 45-year old employee's monthly, pre-tax salary?
4. What do you think are the minimum and maximum amounts for a 55-year old employee's monthly, pre-tax salary?

5. For an employee the same age as you, what do you think are the minimum and maximum amounts for their monthly, pre-tax salary?
6. For an employee with the same qualifications as you, what do you think are the minimum and maximum amounts for their monthly, pre-tax salary?

For employees, general managers are the model success story. This is the organizational position to which promotion seekers aspire and is the top position that is in contact with day-to-day business operations. Naturally, other employees are believed to be very interested in the salaries of the general managers. Question No. 1 has been established in consideration of these factors. Questions No 2 to 4 have been selected as the said ages are nearly equivalent to the timings of promotion to manager and general manager and the timing of the stop in age-salary increases, all of which represent turning points for career development. As these questions are related to the salaries of the employees who differ from the respondents in terms of position and age, the accuracy of their responses is likely to decrease. Therefore, I considered it necessary to prepare questions that are related to the employees who may be more familiar with the respondents and added Questions No. 5 and 6 accordingly. Generally, it is believed that employees are strongly interested in their rivals and that they can easily measure and determine their relative position by comparing it with the position of their rivals.

Table 3 provides the statistical figures related to the answers to these questions. The figures reveal that the levels of not only maximum but also minimum salaries assumed by the respondents are higher than those actually paid. For example, the average amount of the maximum monthly salary that respondents think 35-year-old employees receive is 405.0 thousand yen. This is 74.9 thousand yen (22.7%) higher than the 330.1 thousand yen actually paid. It is quite understandable that it is difficult for respondents to accurately estimate the salary level for employees who are much older. However, they also estimated the salaries of employees equally qualified or in the same age group to be much higher. The only exception is the minimum salary provided by the employees who are classified in the classes one and eight. Their estimates were lower than what is actually paid. As a whole, we can say that employee knowledge about salary levels is substantially ambiguous.

Furthermore, deviations in the understanding of salary levels are significantly

Table 3. Knowledge regarding maximum and minimum monthly salaries

Question		Current Amount (1,000 yen)			Average (1,000 yen)	Standard Deviation	Variable Parameter	Number of Respondents
Monthly Salaries of Employees Age 35, 45, 55, and General Managers	35-year-old Comprehensive Employee	Max.	330.1	Max.	405.0	94.8	0.23	581
		Average	281.6					
		Min.	222.4	Min.	284.2	54.8	0.19	582
	45-year-old Comprehensive Employee	Max.	428.3	Max.	515.9	124.4	0.24	581
		Average	385.0					
		Min.	338.8	Min.	345.7	67.0	0.19	580
	55-year-old Comprehensive Employee	Max.	495.0	Max.	590.2	173.1	0.29	582
		Average	437.0					
		Min.	356.6	Min.	385.0	86.3	0.22	582
	General Manager	Max.	502.0	Max.	773.2	289.6	0.37	583
		Average	478.6					
		Min.	457.1	Min.	572.3	176.0	0.31	584
Salaries for Employees of the Same Age	35-year-old Comprehensive Employee	Max.	330.1	Max.	414.4	93.1	0.22	31
		Average	281.6					
		Min.	222.4	Min.	285.4	58.0	0.20	31
	45-year-old Comprehensive Employee	Max.	428.3	Max.	562.5	69.4	0.12	8
		Average	385.0					
		Min.	338.8	Min.	353.8	46.0	0.13	8
	55-year-old Comprehensive Employee	Max.	495.0	Max.	607.1	117.0	0.19	7
		Average	437.0					
		Min.	356.6	Min.	385.7	47.6	0.12	7
Salaries for Employees with the Same Qualifications	Qualification First Class	Max.	174.7	Max.	178.6	17.7	0.10	7
		Average	167.9					
		Min.	159.2	Min.	143.6	25.0	0.17	7
	Qualification Second Class	Max.	242.5	Max.	269.6	69.2	0.26	23
		Average	196.5					
		Min.	178.9	Min.	186.5	40.9	0.22	23
	Qualification Third Class	Max.	291.4	Max.	300.2	57.5	0.19	109
		Average	230.8					
		Min.	203.2	Min.	217.4	38.6	0.18	109
	Qualification Fourth Class	Max.	345.9	Max.	374.3	90.7	0.24	139
		Average	269.9					
		Min.	237.9	Min.	266.1	46.5	0.17	139
	Qualification Fifth Class	Max.	388.9	Max.	413.3	85.8	0.21	109
		Average	311.7					
		Min.	277.8	Min.	307.4	74.9	0.24	109
	Qualification Sixth Class	Max.	411.7	Max.	452.0	68.8	0.15	99
		Average	359.7					
		Min.	320.3	Min.	334.2	42.4	0.13	99
	Qualification Seventh Class	Max.	442.7	Max.	518.3	81.4	0.16	66
		Average	420.6					
		Min.	389.8	Min.	403.1	76.6	0.19	66
	Qualification Eighth Class	Max.	502.0	Max.	586.9	105.5	0.18	34
		Average	478.6					
		Min.	457.1	Min.	449.1	36.8	0.08	34

large. Taking the estimated maximum monthly salary of a 35-year-old employee as an example, the average amount is 405.0 thousand yen as mentioned above, with the standard deviation of 94.8 thousand yen (coefficient of variance: 0.23). This means that the perceptions employees have of the distribution of salaries vary to a large extent. In other words, the employees have only significantly inaccurate information about the wage structures.

4. Factors for Determining Awareness

It is generally considered that the degree to which employees accurately perceive their working environment and conditions depends largely on their capabilities. One of the indexes that represent their capabilities is the performance appraisal made by their company. Age, length of service and educational background can also be raised as possible factors determining awareness; while experience as a member of society, length of service at the office and level of education also help deepen the understanding of their environment.

4.1. Wage Determination by Compound Accumulation and Capability Indexes

First, let me explain the fundamentals of capability indexes. The most valuable feature of the data used in this study is the fact that the information regarding the employees was accumulated over a long period of time. The capability indexes have been created by applying panel analysis to human resources data.

Many Japanese companies determine the salary of each employee or, in particular, the base salary by determining first the salary increase amount or rate according to the performance evaluation results and then by adding the increased amount to the monthly salary paid to the employee during the previous fiscal year. The company examined for this study is no exception. It neither disregards the currently effective evaluation rank of its employees or creates a completely new evaluation rank in every fiscal year, nor determines their salaries by referring only to the evaluation results of the previous fiscal year. Thus, the basic salary is determined in a manner in which the increase accumulates through the compounding of interest, as indicated in the following formula:

$$w_{it} = w_0 \prod_t ((1 + d_t)(1 + \alpha_{it} + \varepsilon_{it}))$$

In this formula, w_0 is the amount of the salary effective at the time of

recruitment, d_t is the base-up ratio for each fiscal year, and $\alpha_{it} + \varepsilon_{it}$ is the salary increase ratio applicable to an employee i in the fiscal year t. This is the portion that is determined on the basis of the evaluation. However, α_{it} is the portion that is determined on the basis of personal capability or contribution, while ε_{it} is the portion of accidental evaluation error.

The following is the logarithmic formula converted from the above formula:

$$\ln w_{it} = \ln w_0 + \sum_t \ln(1 + d_t) + \sum_t \ln(1 + \alpha_{it} + \varepsilon_{it})$$
$$\cong \ln w_0 + \sum_t d_t + \sum_t \alpha_{it} + \sum_t \varepsilon_{it}$$

If the base-up ratios and regular pay raises of an employee are the same throughout the period, namely in the cases of $d_t = d$ and $\alpha_{it} = \alpha_i$, the following formulas are established:

$$\ln w_{it} \cong \ln w_0 + Td + T\alpha_i + \sum_t \varepsilon_{it}$$

or

$$\frac{\ln w_{it}}{T} \cong \frac{\ln w_0}{T} + d + \alpha_i + \frac{1}{T}\sum_t \varepsilon_{it} \qquad (1)$$

T is the number of consecutive years of service or the number of years spent in the labor market if the experience of a mid-career transfer can be considered applicable. Personal capability, α_i, can be interpreted as the fixed effect that is obtained when an estimation is made with Formula (1) and panel data. [3]

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[3] The internal salaries are determined on the basis of the wage tables and items that are stated in employment regulations. The basic salaries in particular are automatically and clearly determined once necessary items are determined, including length of service, age, qualification, class-correspondent pay and evaluation. More specifically, once these necessary items are fixed as explaining variables, no room is available for other factors to have an effect on the conversion of the items into salary. This conversion involves none of the meddling factors that are usually discussed in the estimations. Special exceptions are sometimes utilized by the company, but the data used for this analysis include no such cases. Thus, unlike the analysis involving macro data, problems in which the fixed effect is influenced by factors other than the variables used in the estimation have successfully been avoided. However, although the salary conversion is not easy, this analysis has been conducted on the assumption that explained variables can be statistically and nearly represented by a linear equation with explaining variables. The fact that the estimation formula is essentially not complete does present a problem. As a result, it is almost impossible to avoid estimation errors.

4.2. Estimation Results

Table 4 shows the estimation results. The assumption that the entire fixed effect is zero is rejected by F=57.11 (value P = 0.00) and the existence of the fixed effect α_i is designated statistically. More specifically, it becomes apparent that salary increase rates vary from one employee to another and that the differences are somehow static. This fixed effect is considered to be the capability or long-term internal evaluation of each employee.

Table 4. Estimation of capabilities

	Parameter	P value
1/Number of Years in Service	12.15	0.00
Constant Term	0.03	0.00
Hypothesis Test: Entire Fixed Effect = 0	F(748, 5066) =57.11	Prob > F = 0.00
Number of Observation	5816	
Number of Groups	749	
R^2 within	0.9999	
between	0.9999	
overall	0.9999	
Corr (u_i, Xb)	0.2051	

The next issue is the degree of the relationship between the capability estimated here and the employee awareness concerning human resources policies and wage structure. I will analyze the percentage of correct responses to questions about human resources policies from Table 2 and the degree to which employees accurately understand the maximum and minimum salary amounts from Table 3, as well as the capability indexes discussed earlier.

The estimation results are shown in Table 5. This table illustrates only those cases in which variables considered to be related to personal capability have a significant effect. The table shows that the higher the fixed effect, the higher the percentage of correct responses. Or, the more capable the employee, the more accurately he/she understands human resources policies. However, the impact of the fixed effect on perceptions of salary levels and disparity has not been observed in the majority of cases.

Meanwhile, it has been noted that whereas age has a positive effect, length of service and university graduate dummies have negative effects on perception errors [(lowest estimated salary - lowest actual salary) /lowest actual salary] related to the maximum salaries of employees with the same qualifications.

Moreover, it has also been observed that university graduate dummy variables and two-year college or vocational school graduate dummy variables negatively affect the perception error relating to employees with the same qualifications. However, a promising combination of variables able to determine the errors in other cases has not yet been found.

Table 5. Determining factors for awareness of human resources policies and wage structure

Explained Variable	Correct Response Rate Regarding Human Resources Policies		Maximum Monthly Salaries of Employees with the Same Qualifications		Minimum Monthly Salaries of Employees with the Same Qualifications	
	coefficient	P value	coefficient	P value	coefficient	P value
Estimated Capability	20.634	0.050	0.027	0.954	0.212	0.603
Age	-0.144	0.423	0.018	0.028	0.005	0.509
Number of Years in Service	0.147	0.411	-0.017	0.034	-0.006	0.384
Lady Dummy	0.641	0.449	-0.046	0.350	-0.054	0.213
Graduate	1.254	0.430	-0.101	0.151	-0.093	0.133
University Graduate	0.884	0.401	-0.100	0.031	-0.085	0.037
College/Vocational School Graduate	1.120	0.134	-0.033	0.338	-0.055	0.069
Constant Term	8.781	0.013	-0.167	0.321	0.162	0.272
Number of Observation	184		422		422	
R^2	0.056		0.017		0.032	
Adjusted R^2	0.019		0.001		0.015	

5. Conclusion

This paper has verified the degree to which employees accurately understand wage structure by matching the human resources policies of a business firm with questionnaire survey results.

As a result of this analysis, it became apparent that the knowledge of the employees concerning policies and wage structure is not necessarily sufficient, and more specifically, that the overall image employees have of their salaries is substantially different from the reality. Furthermore, it has been verified that the competency of employees has a positive correlation with the accurate comprehension of human resources policies, though this competency does not necessarily share a strong correlation with their knowledge of wage structures.

In situations where employee knowledge regarding human resources policies is insufficient and employee awareness of their actual status is inaccurate, changes in these policies will not bring about the desired results. It can be

argued that in order to change the behavior of workers, it is necessary to upgrade the level of their knowledge regarding human resources policies. In some business firms, the introduction of a new performance evaluation has not yielded any positive results. Therefore, it is necessary to be cognizant of the presence of problems relating to employee knowledge and awareness.

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Career Analysis of Today's Japanese from Different Angles: Dramatic Change of the Japanese Society and Workers' Way of Life

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1. Objective and Background of the Research

The Japanese society today has come to accept much of the notion that a person's professional life is a continuous process of career formation. It is now not rare for firms to introduce the concept of career formation assistance in employment management of employees. On the other hand, many firms in recent years are reviewing the systems and practices of long-term continuous employment of workers, which have traditionally been a feature of Japanese firms. For these reasons, it has been pointed out that the importance is increasing for workers to voluntarily engage in developing their own occupational abilities for their professional career formation. One of the future challenges facing the Japanese society as regards individuals' professional career formation, therefore, is not only to wait for firms to make further improvements in employment management, but also to implement some form of an abilities development mechanism that workers can utilize even outside of the firms they are working for.

The objective of this research is to closely examine individual workers' long-term career formation spanning over 35 years to clarify which social systems workers have used for their professional career formation and consider measures that are effective in workers' career formation.

2. Research Method and Subjects

Research Method and Selection of Subjects

In this research, we conducted an interview survey on those who were subjects of career follow-up surveys of youth that the National Institute of Employment and Vocational Research[1] conducted for some ten years starting in 1970 on their life courses and professional careers after finishing junior high school, and analyzed the results of the interview survey. Although 25 years

[1] The National Institute of Employment and Vocational Research was a specialized research institute on labor administration and was a forerunner of the Japan Institute for Labour Policy and Training.

have already passed since the career follow-up surveys were concluded, we asked the subjects' cooperation in the interview survey, and those who agreed were made the subject of this survey.

Characteristics Concerning the Subjects

The career follow-up surveys mentioned above were carried out on 2,820 students in the third year of junior high school in 71 junior high schools in 7 prefectures; the students were born between 1953 and 1955. The surveys tracked the subjects from the time they were 15 to 26, and the results were compiled in 1988 as a theoretical demonstration of occupational adaptation of Japanese youths from ages 15 to 26 (Occupational History and Occupational Perception of Youth: General Report on Follow-up Research on Occupational Adaptation of Young Workers, National Institute of Employment and Vocational Research [1988]).

There are four characteristics concerning the subjects of this research. First, we can have a more precise grasp of their careers because we can refer to the results of the past surveys. Second, although it is a case study, it is a panel survey tracking the subjects' careers over a period of 35 years. Since there are hardly any long-term panel surveys in Japan, we can obtain data that cannot be obtained from other surveys. Third, as the subjects already have an experience of cooperating in the survey for 10 years, it is easier to obtain their understanding about and active cooperation in the survey that also deals with their psychological aspects. Fourth, the subjects, who were at the ages of 49 to 51 at the time of the survey, have now fully matured in terms of their profession.

Survey Method and the Number of Subjects

We conducted an interview survey on the subjects, using interview sheets and life history calendars. For the interviews, the interviewer met the subject in a place designated by the subject. Two types of interview sheets were prepared: one for men and one for women. Interview sheets for men contained questions on their occupational activities. For interview sheets for women, questions about marriage, childbirth, and parenting were also included, and questions about their occupational activities included community welfare activities and other social activities. This was because more women than men left their jobs after marriage, etc.

Because 25 years have already passed since the last survey was concluded

and some of them changed addresses, we could not reach about half of the respondents to the past surveys. Even when we could reach the respondents, some of them could not cooperate in the survey for one reason or another. In the end, 66 people (47 men and 19 women) agreed to cooperate in this survey.

3. Contents of the Survey and Method of Analysis

In this survey, we tracked middle-aged adults to see what life experience and professional careers they had during 35 years after finishing junior high school. In other words, while our main topic was related to occupation, we examined, from a broader perspective, how they carved out and built their careers in 35 years. More specifically, we focused on major life events (changes in their relation with their parents, marriage, health, etc.), career history, major events in their careers, and their response to those events that they experienced in 35 years. Through this, we analyzed how professional careers and occupational abilities were developed over the long term. Based on the results, we considered how social systems for assisting individuals' professional career formation and occupational abilities development should be.

We analyzed the subjects' professional careers and occupational abilities development behaviors from four viewpoints as shown below, and then comprehensively examined the results of the analyses on the four viewpoints. The first viewpoint involved the transition from school to occupation and included the importance of the period from days in school to beginning of first jobs and social and economic effects. The second was behaviors related to job change (including unemployment), which is a major event in career formation. The third was the relation between men's professional qualification and off-the-job training on one hand and career formation on the other, considered from the perspective of occupational abilities development and abilities certification. Our analysis on the first to third viewpoints was limited to male subjects. The fourth was women's career formation. On the fourth viewpoint, we analyzed not only women's professional careers, but also their life courses, because women can be observed to take different occupational behaviors from men, such as leaving a job after a childbirth, etc. The outline of the results of each analysis is shown below.

4. Results and Discussions

(1) Transition from School to Occupation

First, we checked how the subjects of our survey went into their first jobs by examining the results of the career follow-up surveys. The results showed that their transition from school to occupation was governed to a large extent by the social and economic environment surrounding them at the time. The subjects of our survey lived through a historical period where they were educated during the period of post-war high economic growth and where they went into employment before or after the first oil crisis. It was a time when the percentage of students going on to study at a senior high school rose substantially, with about 80% of their contemporaries attending a senior high school, and when the percentage of students going on to junior colleges and universities also rose. Moreover, the subjects went into employment during the 1970s during which time the oil crisis drastically changed the economy and the situation in the labor market. The situation in the labor market was very much different depending on when during the 1970s the subjects went into employment. In other words, in accordance with the last school the subjects attended, those who completed junior or senior high school went into employment before the effect of the oil crisis was felt, and those who completed junior college or university went into employment after the labor market deteriorated in the wake of the oil crisis. This macroeconomic environment at the time of entry into occupation and each person's microeconomic circumstances influenced each other in creating a dynamic process of selection of their first jobs.

We then compared the results of our survey with the results of a national survey[2] (JGSS). From JGSS, we used samples of 475 subjects born between 1953 and 1955, who were selected to accurately represent the nation. In the career follow-up surveys, records about schooling from the time of entry into first jobs until the age of 26 changed in only 5% (62 subjects) of all samples. Of these changes, 60% were changes from completion of junior high school to completion of senior high school, and 31% were from completion of senior high school to graduation from university. From both of these surveys, it became clear that it was difficult for the cohort born between 1953 and 1955 to improve

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[2] The survey was taken as part of a joint research project conducted by Osaka University Commerce Institute of Regional Studies and the University of Tokyo Institute of Social Science from FY 1999 to 2003, and is called the Japanese General Social Surveys (JGSS).

their schooling once they left school and entered the labor market and that there was no social infrastructure for improving schooling and a second chance was not given to them (Table 1).

Table 1. Schooling-employment patterns and percentages

	Survey at 26	JGSS
Junior high, employment	13.6	12.3
Junior high, vocational school, employment	1.8	1.5
Senior high, dropout, employment	1.2	1.5
Senior high, employment	37.8	42.8
Senior high, vocational college, employment	4.5	6.6
Senior high, junior college (polytechnic), employment	2.0	15.7
Senior high, university, dropout, employment	1.6	0.6
Senior high, university, employment	29.4	18.2
Senior high, university, graduate school, employment	1.4	0.8
Others*	6.7	-
Number of subjects	1220	475

Note: "Others" are those who went from junior college to university and those who returned to school after being employed. Of the figure for "Others," 5% are those whose schooling records changed. In JGSS there are no subjects in this category, because all subjects were classified according to the last school attended.

On the timing of entering into occupation, about 90% of the subjects at all educational levels had transferred to the world of work by June after finishing school. On the channel of entry, we can see from the results of the analysis that by the time the subjects born between 1953 and 1955 went into employment, the method of recruiting new graduates who were selected and recommended by the schools the students attended was widely established. On the employment status and job type of the first job of the cohort born between 1953 and 1955, the large majority of them were in regular employment, and only 6% of all subjects were in non-regular employment. As regards job type, it was highly probable that a person could be employed in a white-collar clerical job if he or she had graduated from a senior high school; this was particularly the case for girls. Compared with graduates of senior high schools of recent years, those graduating from senior high schools in those days could have occupational aspirations, plan their future, and select their careers, as the types of jobs open to them were different from today.

Third, it became clear that planning done by students while they were still

in school, their positiveness about employment, and collection of information on occupational selection had a major impact on early career formation.

The subjects were employed in the mid-1970s. Unlike today, there was a system in those days where schools and employment security organs worked in concert to place new graduates and allow seamless, smooth transition from schools to the workplace. Even with this system in place, however, there was still a strong need for increasing students' knowledge about and interest in occupation and providing concrete information, and this was a key to smooth transition from the academic world to the world of work. Among our subjects, some had deep "regret" or "remorse" engraved on their hearts about their selection of their first jobs, even after 30 years of employment. This shows that in a person's long professional career, the process of transition from school to occupation has a significantly important meaning.

Fourth, the situation of the labor market at the time of completion of one's school education had a major impact on the process of transition from school to occupation. The subjects went into employment in the 1970s, a decade in which the economy and the state of the labor market underwent dramatic changes every several years. Depending on when the subject went into employment as a new graduate, the situation of the labor market was very different. For those entering into an occupation after finishing a junior or senior high school, the recruitment market was exceptionally favorable for them as the economy was at the peak of high growth before the oil crisis. In contrast, for those who graduated from a junior college or university, the period in which they were newly employed or, in other words, in which they had to select their first jobs, was the period of economic recession in the wake of the oil crisis and degeneration of the labor market. In reflection of these differences in the labor market, the percentage of those who quit their first jobs, which is usually lower among university graduates than among junior and senior high school graduates, was not significantly different at all educational levels among the cohort of our survey.

In addition to the situation in the labor market, the situation in the subjects' own homes was another factor that could not have been controlled by the subjects. At the time, it was not exceptional for a new graduate to give up further study at a higher school in consideration of the financial means available to his or her family or other circumstances of the family or to give up employment at a firm offering better working conditions in order to help the family business.

Obviously, this does not mean that they would be at a disadvantage regarding conditions of all of their subsequent employment or the quality of their professional life. They may carve out a lively professional career based on their talent and effort, and they may, in 35 years time, equal or surpass those with more schooling in terms of income, employment status, job satisfaction, assets earned through such a career, and happiness in family life. Such cases are not exceptions either. However, when it happened that there were adverse economic conditions at the time of employment after graduating from a school, it did affect their first employment and, as the effect of their first employment, the subsequent jobs that might become available to them. This shows that there is an incidental factor (luck) that is beyond one's control in career formation. It suggests that existence of a mechanism for overcoming the "unluckiness at the starting point," at birth or at employment, has a significantly important meaning for career formation of each member of society.

(2) On Job Change, Unemployment, and Career Formation and Occupational Abilities Development

We focused on job changes that occurred to the subjects up to around the age of mid-20s, which corresponded to a period from the 1970s to early 1980s, and considered factors for a "good job change."

As favorable conditions for a "good job change," we assumed five criteria related to the period of unemployment and professional life after reemployment, as follows: (a) a shorter period of unemployment is more favorable, (b) long-term employment stability after a job change is more favorable, (c) it is more favorable for the reemployed to be able to utilize his or her capabilities at the new workplace and for his or her income to rise as a result, (d) it is more favorable for the working conditions of the reemployed to improve, and (e) it is more favorable for the level of satisfaction about professional life and life in general to rise. We examined factors that had an effect on fulfillment of the above criteria from seven different angles as shown below.

First, we examined the effect of the economic environment at the entry into first jobs and of the economic conditions at the time of job transfer up until the age of around 25 by educational level. For those who were employed after finishing senior high school or prior to that, the economy was booming at the time of their employment, and many of those who found jobs through their schools' offices were employed by large firms or went into civil service. Many

of those who were employed not through their schools' offices started work as a part-timer or in other types of non-regular employment, and, in often cases, changed their jobs subsequently. There was hardly any period of unemployment during a job change, and their working conditions improved through a job change.

For many of those graduating from schools of higher education, it was difficult to find employment as the economy was in recession in the wake of the oil crisis. Those who changed jobs after being newly employed after graduating from a university had been employed not by firms that they "really wanted to work for" but by firms that they "did not mind working for." Some of them were employed not as a regular employee. After a job change, many of them stayed in the new job for ten years or longer. Early job change after finding a job during the recession was in some way like reselecting their first job. In these cases, a "good job change" was "good" both for the subject and the country as a whole.

Second, with regard to the relation between working conditions, such as wages and working hours, and job change, many of those who were employed without their schools' offices were in unstable employment as a part-timer or were employed in a workplace with long working hours and other unfavorable working conditions. In these cases, a job change saw improvement in working conditions, but improvement was only relative as the original working conditions had been bad. In such cases, the subjects changed jobs more than once. Improvement in working conditions was good, but frequent job changes had a negative effect on satisfaction about one's professional life and life in general.

Third, on the relation between occupational abilities before and after a job change, a job change done with a sense of direction about one's career resulted in abilities development and utilization and a higher level of satisfaction after a job change. Setting of a direction about one's career did not necessarily had to be done consciously by the subjects.

Fourth, with respect to social networks that contributed to a job change, we found that formal information was mainly used for job changes. The existence of such formal information was sometimes learned through personal networks. Young people with not enough social experience were sometimes not capable of sufficiently utilizing the information on jobs even when the information was presented to them. In some cases, they could not utilize general information because they did not know where to find such information.

Fifth, we considered in which career stage a job change was deemed to have happened. According to Super (1956, 1980)'s career development theory, a job change at one's youth has a significance as career exploration. This was confirmed in the career follow-up surveys that our subjects cooperated in for 10 years starting 35 years ago.

In our survey, however, we could not observe outward exploratory behavior by the subjects who went into stable employment at a large firm, etc. after graduating from a university. It appears that a reason for this is that they had already established a sense of values that gave priority on stability and that they planned to stay with their firms in the future. Moreover, it was considered as social norm at that time that new graduates should be "kept on rails" in their transition to occupation, which was one feature of the period in which the subjects lived, and it was probable that they did not need to think anything about a "career." If one was employed by a large firm, there was also a possibility that one would find a job best suited to him or her through redeployment within the firm.

Sixth, with regard to the relation between one's role in life and professional career, many of our subjects had a strong awareness about their filial role. This was particularly the case with subjects who were the eldest son to a parent who was self-employed. This awareness was also strong and felt early when the subjects had family business or farmland to inherit. This awareness could suddenly come to the surface as a factor of a job change when, for example, the parents became ill. Parents also weighed the stability and prospects of the organization that employed their child against the family business or assets, and told their child about their wishes.

Seventh, on the relation between awareness of long-term career and values at one's youth and job change, there were, among our subjects, those who were and those who were not aware of their "career" in their youth. Many of those who stayed in fixed employment without a single job change were not aware of their "career." Among those who changed jobs, there were those who changed jobs with the awareness about a "career" and those who did not have such awareness in changing jobs. Even if one was not aware about a career design at a time of a job change, one could have derived stability and satisfaction from a job change, and therefore awareness about a career was not an absolute condition for a "good job change." Many of those who graduated from a school of higher education had awareness about their "career." All those subjects who were a

graduate of a university and who changed jobs thought they changed jobs in search of a career.

(3) On Occupational Qualification, Training, Self-development and Other Activities away from the Workplace, and Career

First, as could be expected, individual workers who thought education and training was effective were mostly those who stayed in the same employment without any job change. For blue-collar workers, education and training was mainly provided by firms, but for white-collar workers, there were cases where individual workers exercised initiative in taking education and training while firms paid the costs of such education and training. Among white-collar workers, individual workers had a high level of autonomy in education and training.

Second, while OJT naturally was at the core of occupational abilities development, off-the-job training (Off-JT) functioned as substantiating experience gained from OJT. For example, while Off-JT for different occupational abilities did not in itself allow workers to perform work, it gave them "theoretical understanding" of the work. Similarly, study of law through a correspondence course, for instance, gave workers the "foundation" for performing their work. This way, Off-JT functioned effectively in the sense that it partially supported performance of their work. In the case of clerical work, however, the effectiveness of Off-JT was not strongly recognized.

On the other hand, not a few subjects had doubts as to the effectiveness of training designed and provided for different strata of employees. As mentioned by Fujimura (2003), "clarification of objectives" should help to increase such training's effectiveness.

Third, there were a number of cases where a white-collar worker took the initiative in receiving education and training away from work but convinced the firm the worker was working for to bear the cost of such education and training by stressing the effectiveness of such education and training. Such examples indicate that Off-JT started at the individual worker's own initiative is highly effective and that such education and training has potential. Self-development activities such as learning the use of a computer had a certain effect on our subjects' occupational abilities development, even though they had certain limitations that could not be avoided considering the times in which they learned such skills. In the case of blue-collar workers, however, it was more likely that firms would continue to provide education and training

required for workers to perform their work, and such education and training was occupationally effective for individual workers as it was directly linked to increased productivity of workers and to securing and increasing remuneration and other benefits that workers received.

Fourth, for those in clerical and management jobs, qualifications that could be used as effective proof of their occupational abilities were limited. It was also rare that such workers would receive more remuneration or other benefits within their organizations because they acquired certain qualifications. This suggests that rather than improving the qualification system, there is social significance in developing and spreading ways to properly identify and sort out workers' experience in education and training activities, including occupational experience a worker has accumulated, training experience, and correspondence courses taken. In the case of blue-collar workers, too, although obtaining certain qualifications was a minimum requirement for a promotion and served as a measure of occupational abilities development, it was not directly linked to promotion. In any case, as long as one was to belong to a single organization without a job change, the effectiveness of occupational qualification on promotion was limited. Moreover, with respect to occupational qualification required for one to start a business as an independent business owner, many subjects considered management skills as a more important requirement for those starting a business and making it a success, and here too the role of occupational qualification was limited.

(4) Relation between Women's Life Courses and Occupation: Responsibilities in the Homes and Parenting

First, we analyzed the life courses of 19 women, over a period of 35 years, in relation to their response to major life events and professional activities, and found that they shared common traits in how they related to their occupation, regardless of whether or not they stopped working after marriage or childbirth. These traits were that women, in the final analysis, compared professional activities and parenting and concluded that parenting and household management arising from that to have a greater priority. They also considered the options open to them at the time of marriage or childbirth and selected the option that was closest to their sense of values or their way of life. In this case, the options were not either to take parenting or employment. It was to take the option with the greater priority while leaving room for the other option if it was possible to

exercise that option without making life impossible. And those women who could realize both options at the same time were those who continued in employment.

Therefore, it can be surmised that if there were sufficiently favorable conditions with respect to the place of employment, working hours, working style, and other working conditions and with respect to wishes of the husband and support that could be provided by other female members of the family, many women would not have stopped working.

On the employment of married women, the merits of the childcare leave system have often been stressed recently in relation to families' need for parenting support. However, the results of our survey show that women's employment after childbirth was promoted not by the system of childcare leave but by the availability of daily working conditions that allowed women to strike a balance between work and the role of parenting that women positively perceived as being part of their way of life. In other words, it was suggested that the place of employment, working hours, and other working conditions had a major impact on women to continue working. This obviously does not mean that women hoped to find non-regular employment. In making an overall judgment on whether or not to continue in employment, women considered the social significance of the work together with other factors such as commuting, overtime, leave, and the working environment. They were not necessarily looking for work entailing short working hours or work that was easy to perform. And once they decided to continue in employment, they made great efforts in carrying out their duties at the workplace. All of them, including those who started to work again after leaving their original jobs at childbirth, were sufficiently earnest and enthusiastic about their work, and saw value in the challenges the work offered and in the social significance of the work.

In sum, the important questions for women regarding work were whether or not the work and the workplace allowed them to "work while raising their children" during a period they saw as a parenting period and whether or not working while parenting during this period raised the value of their life, as judged from their own sense of values, as opposed to not working during this period. In some respects, women made judgment about continuing to work not based on the circumstances they were in at that particular time but chose their way of life over the long term. Even though the social environment surrounding women or cultural and historical background might be an underlying factor in

women's decisions, it was nonetheless true that they decided for themselves what action to take at that time. In actuality, many women temporarily stopped working. But they did so with the hope that they would realize broader social participation through work or other activities in the future and would later realize their hope of social participation.

Second, all subjects returned to professional activities (including community activities) at a certain point, even though some of them might have stopped working at one point. They were all positive and eager to do a good job. Because they had stopped working in their youth, their past work experience did not particularly figure in their selection of jobs and in their treatment as employees. Educational background was also irrelevant. Licensed or registered qualifications did figure in the decision, but it is doubtful if it can be universalized as a determining factor (Table 2).

In addition, women who returned to work through various paths and in various forms were not dissatisfied about having done that. It appears that the reason was that criteria that were important to them in their selection of jobs were not related to job type or social status. Social participation was their inner motive for returning to work.

At any rate, the most important finding was that even though women might stop working at one point, they would eventually return to work. As Japan has entered an era of a declining population, the government and society as a whole must address the issue of allowing energetic female labor force to exercise their full potential. There is a considerable social significance in guaranteeing the realization of women's specific intention of and actions for exercising their potential. It is important that we research more than before on what will constitute conditions that will facilitate more women to engage in work, regardless of whether or not they stop working after marriage or childbirth.

Third, when the subjects were bereaved of or separated from their husband, women's burden was too great to bear. From the viewpoint of the subjects involved, assistance provided for such bereavement or separation was not enough considering the burden they faced.

Table 2. Long-term professional careers and education background of women

	Work experienced and educational background
F1	Type I (nurse-teacher) with the possibility of regional transfer. Junior college.
F2	Multiple types, including nurse, insurance saleswoman, family worker, supermarket salesclerk, etc. Worked in four different prefectures as a nurse. Junior college.
F3	Type II. Clerical work and telephone operator. Worked as a telephone operator for a long time. Left work after childbirth and became a full-time homemaker. Returned to work when the youngest child was three years old. Telephone operator (contract worker). Vocational college after graduating from a senior high school.
F4	Type IV. Kindergarten teacher. Part-timer at a tofu shop, nurse's aid at a municipal hospital, director of a cooperative. Junior college.
F5	Type IV. Clerical job in a gallery→Type II clerical job in bank-related work (telephone operator for telephone banking services; responding to inquiries from corporate clients). Worked as a part-timer with the exception of the first work. University.
F6	Type III. Employed only in the first job (secretary of the president of a large firm). Family worker of a liquor store, manager of a convenience store. University.
F7	Type VI. Regular employee of a securities firm (sales and clerical)→piecework at home after marriage→part-timer at a bank (collection, sales of products)→ part-timer helping a friend's store→part-time cleaner of a bank during daytime, insurance saleswoman at night→leader of part-timer salesclerks at a supermarket. Senior high school.
F8	Type IV. Accounting job at an apparel firm→part-timer at a hotel restaurant→at the same time, clerk at a bar→part-time cleaner of a restaurant attached to a bank. Became mentally stable after marriage and gained weight. Consider herself as the so-called *freeter*. Dropped out of a graduate school.
F9	Type I. Primary school teacher at six different schools (in Osaka and Hyogo), woman director of a labor union for about three years from ages 47 to 50. Dropped out of a university (night school).
F10	Type V. Sewing (first and second job)→farming (family business)→sewing (part-time) while helping in farming→farming and cleaning (for two different firms, one then the other)→farming and assembly of office supplies. Junior high school.
F11	Type V. Sales→clerical job→(left the job when the husband was transferred)→ piecework at home (electronics parts, etc.)→at the same time, water meter reader (part-time)→water meter reader and part-timer at a florist (about twice a week) after stopping piecework at home. Senior high school.
F12	Type II. Helped the family business by sewing→nurse in a public school (including working as a part-timer at first). Worked in three schools as a result of transfers within the same city. Junior college (correspondence course).
F13	Type IV. Clerical work at a food company (rice crackers) for three years→clerical work for a trading firm dealing in ready-built houses (three years)→full-time housekeeper, then reemployed; the working hours were irregular at first to suit the firm's needs (about three years)→part-time work manufacturing electrical parts. Full-time employment at a firm offering challenging work, leader of part-time workers. Currently in the same position. University.

F14	Type I. After graduating from school (vocal music course), became a piano teacher. Currently in the same work. Longed to meet the teacher who taught her. Found the teacher's address two or three years ago and met the teacher for the first time in 30 years. Junior college.
F15	Type II as a regular employee, Type I as family worker, Type I as a director, and part-timer in a variety of work. General clerical work at an accounting firm (year and a half)→clerical work at a resort development firm that recruited her (two years)→left the job after becoming pregnant and married→helped in clerical work for her father's construction business (had been helping the family business from before)→the husband obtained a real estate business license and started a business, and she became a director of that firm. Currently in the same work→ even after the husband started business, she earns the money she spends by working at home and as a part-timer. Senior high school.
F16	Type III. Clerical work at a bank→clerical work at a licensed tax accountant's office run by her uncle→director of a firm selling agricultural machinery run by her husband (however, she considers herself mostly as a full-time housekeeper). Junior college.
F17	Type III. Clerical work at an apparel firm (regular employee; the work was not challenging; three months)→part-timer in a medical school laboratory(cleaning instruments and devices, English typewriting, assistant in experiments and examination and treatment of outpatients (the work was interesting and wanted to stay in that work for always))→senior high school teacher (the income stabilized but was always troubled by interpersonal relations), worked in four high schools within the same prefecture. A superior at the medical school advised her that if she passed the teacher's exam, she should become a teacher. He was convinced that she was "suited to fostering students' talent" and told her, "becoming a teacher would be more interesting (than become a pharmacist that she aspired to be when she was in a senior high school) so she should definitely become one." University.
F18	Type I (practitioner of acupuncture and moxibustion; currently runs a clinic). After graduating from a vocational college, apprenticed under a master practitioner for two years and came to Tokyo to become a live-in worker for no pay to learn about "food and nutrition." Started own practice at the age of 28. Soon after, went to study in China through WHO. After returning to Japan, studied further to acquire more qualifications. Was then entrusted with the running of a school by the vocational college she graduated from and again began her own practice. Currently in the same job. University and vocational college.
F19	Type II. Clerical work for a shipping agent (general administrative affairs and accounting; the firm paid the fees for her to attend a seminar on accounting)→ part-timer for posting fliers. When she was working as a part-timer (at around the age of 48), her eldest son was seriously injured, and with the death of her father-in-law, she could not continue working. Her mother has been in need of nursing care for the past ten years, which requires her to visit her mother irregularly, and she has not been able to find work. Vocational college after graduating from a senior high school.

5. General Discussions

The home background at the time of one's birth and the economic environment of society as a whole at the time of one's entering into employment have a direct impact on one's selection of the first job. And the selection of the first job, as a starting point of career formation, has a major influence on the subsequent professional career formation. Therefore, a social mechanism for overcoming any "unluckiness at the starting point" becomes crucial. Giving young people a "second chance" by allowing them to graduate from a higher level of schools after employment or providing them with education and training for acquisition of new skills is one of the effective measures for that, but such measures cannot be implemented singly by individual firms they work for. Rather than relying on OJT and other internally conclusive type of training for career formation of youth, we need to build a system for actively supporting young people that goes beyond the boundaries of individual firms they work for.

Examining the situation regarding job change up until the age of around the mid-20s after the selection of the first jobs, we found that for those entering the labor market at a time of recession, the job change had an aspect of reselecting their job, and as economic conditions improved subsequently, their working conditions also improved through a job change. While a job change can be considered positively as one of the activities in the process of professional career development, those changing jobs were not able, in not a few cases, to fully utilize the information that could help them in the job change. Therefore, there is a need to provide some kind of professional assistance, such as guidance on the use of information, to young people who lack job experience.

For the subjects of our survey, the traditional values based on long-term continuous employment (lifelong employment) made up the foundation of their career design. As social trends began to change in their middle age, most of them were forced to make a revision of these traditional values, which they did by readjusting their careers based on their past professional experience. Today's young people, however, are surrounded by different sets of values, and also the prevailing values of the times quickly change. As a result, it is difficult for them to prepare a detailed career design. Therefore, it is important to create and further improve a system for adjusting the labor supply and demand of those who decide to make a change in their career design and a system for providing information on occupations.

The traditional values observed among the subjects of our survey also corresponded with the idea and actions where it was not the individuals who designed their personal careers for career formation but it was their firms that set a plan for long-term utilization of workers and carried out abilities development of their employees. This was the reason that the mechanism of occupational abilities development combining the company initiated OJT and Off-JT was readily accepted by workers. The findings of our survey show, however, that while the effectiveness of Off-JT was well recognized among those in technical jobs, it was hardly felt among white-collar workers. The latter, on the other hand, emphasized the importance of abilities development through practical job experience and career formation through accumulation of such practical experience. Some white-collar workers, however, did recognize the effect of Off-JT on career formation, when, based on the assumption of long-term employment, Off-JT was proposed at an individual worker's initiative to meet an objective that the worker felt it needed to be met and such Off-JT was paid for by the company. As for company initiated training designed and provided for different strata of employees, some subjects did not remember the contents of such training as it often lacked a clear objective. It suggests that regardless of whether Off-JT is initiated by a company or an individual worker, Off-JT is effective when it respects the wishes of individual workers and when its objectives are clear. Among white-collar workers in our survey, the effectiveness of occupational qualifications was limited both within and outside the organization they worked for.

Women decided their actions relating to work not within the context of parenting as an addition to working but within the context of working as an addition to parenting. Not a few men designed their careers by giving top priority to the possibility of living in their hometowns and living near to their parents in the hope of gaining their support in parenting. Up until now, the prestige of an occupation or the organization one worked for and the size of one's paycheck have been a measure of a successful career, and in this framework a fast-track career was considered the ideal. There is a gap, however, between this "framework of objective thinking" and the "framework of the thoughts of the parties concerned," a gap that cannot be ignored. Career research is needed where this decision-making framework of the parties concerned is not made to suit the "framework of objective thinking," but where individual workers' subjective views are properly taken into account.

For formation of careers based on the framework of individual workers' thoughts, there have to be jobs that allow such formation of careers in regions in which individual workers live. Based on the assumption that people living in various parts of Japan have respect for the nature, culture, history, and tradition of the region they live in, there have to be jobs and workplaces that provide a favorable working environment for people living there. By closely examining the results of our survey, we find that formation of a career based on the framework of the thoughts of the parties concerned does not equate simply to each individual living one's life in whatever way one pleases or choosing an easy way of life. It can more aptly be expressed as manifestation of an effort to shoulder the family that one derived one's present life from, one's own family, and regional history and to pass such heritage to the future generations. Each individual made his or her own judgment as to who should do what to support their regional community and families constituting the community and took action. Therefore, for continuous efforts in such career formation, measures for stimulating regional job creation, with a particular focus on job creation in areas where individuals live, and regional efforts in assisting individuals' career formation are needed.

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The Problems of the Women's Job Continuity and the Childcare Leave System

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I. Issues

The support systems for balancing work and childcare have expanded under the measures against the declining birthrate, triggered by the so-called "1.57 shock," which the total fertility rate dropped down to 1.57 in 1989.

Managing both work and childcare requires supports from multiple sources including companies, families and communities. Companies promoted the childcare leave system and utilization of that leave as the primary support sysytem for balancing work and childcare. Preceding studies also point out that effects are made by the childcare leave system on job continuity for women at the stage of childbirth/childcare. Nevertheless, the birthrate continues to drop and many women quit their job at the stage of childbirth/childcare. Companies are required to improve their diversified support systems for balancing work and childcare in addition to the childcare leave system under the measures against declining birthrate. To provide effective supports, it is important to organize supports that supplement the childcare leave system, by identifying elements of the childcare leave system which enabled women to continue their job and other elements which failed to enable them to do so.

With the analysis of finding out whether or not improvements were made for job continuity at the stage of childbirth/childcare with the progress of the childcare leave system, we attempt to identify factors that determine job continuity and consequently identify effects of the childcare leave system and issues related to support systems for balancing work and childcare. For the purpose of analysis, examination in this paper is limited only to those who are under employment and excludes those who are self-employed and family employees.

II. Declining Birthrate and Companies' Support Systems for Balancing Work and Childcare

1. Declining Birthrate and Childcare Leave System

Initially, declining birthrate and managing both work and childcare were two separate issues. But the support systems for balancing work and childcare were expanded since the 1990s as an important part of the measures against the declining birthrate, based on the concept that women avoided marriage and childbirth due to difficulty of managing both work and childcare.[1]

Within the measures against declining birthrate, the "Supporting to manage both work and childcare" had two objectives, "Reorganization of employment environment for achieving both work and childcare," and "Fulfillment of diversified childcare services,"[2] while the primary support systems for "Reorganization of employment environment" was closely related to provisions of the Childcare Leave Law (Law Concerning the Welfare of Workers Who Take Care of Children, Including Child Care Leave) (enacted in 1991, executed in 1992, currently called the Child-care and Family-care Leave Law).[3] For this reason, companies expanded their support systems for balancing work and childcare, mainly the childcare leave system. The Childcare Leave Law guaranteed the right of workers to take childcare leaves.[4] Since this law was put into effect, an increasing number of companies established their childcare leave system. Although not steadily, the rate of utilization of the childcare leaves also increased.[5] It is important to promote the childcare leave further in relation

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1 The background information on the measures against declining birthrate is provided by the Cabinet Office (2004, 2005).

2 For details, see "Angel Plan" ("Basic Approach for Supporting Childcare in Future" approved by the four Ministers including the Ministers of Education, Health and Welfare, Labour, and Construction, established in 1994) published by the Ministry of Health and Welfare (1996).

3 For social movements in and out of Japan for establishment of the Childcare Leave Law, see Fujii (1992), Yokoyama (2002) and the Japan Institute for Labour Policy and Training (2006b).

4 With the introduction of the Childcare Leave Law, men also became eligible for the childcare leave system. Since the focus is put on women in this paper, the issue of utilization of childcare leaves by men will be separately discussed in future.

5 According to the "Basic Survey on Employment Management for Women" (the Ministry of Health, Labour and Welfare), the number of companies (30 employees or more) that provided the childcare leave system increased from 50.8% in 1993, soon after the Childcare Leave Law was established, to 81.1% in 2002 in ten years. This survey shows that the utilization of leaves of women working for companies

to the measures against declining birthrate currently under way.[6]

Despite the fact that these support systems for balancing work and childcare are expanded, the birthrate continues to drop. According to the Ministry of Health, Labour and Welfare (2001) meanwhile, 67.4% of women who had job a year before their childbirth did not maintain their job six months after the childbirth. Even today, there is a persistent problem for women who have to make a choice of either continuing job without having children or quitting job to have children.

It has to be noted that preceding studies point out that women continue to work at the stage of childbirth when the childcare leave system is available at their workplace.

Higuchi (1994) pointed out that positive effects were found with the childcare leave system on the job continuity of women, based on the Employment Status Survey (Management and Coordination Agency, 1987), conducted before the Childcare Leave Law was established. Later, Higuchi, Abe and Waldfogel (1997), Morita and Kaneko (1998), Nagase (2003) and others verified that more women continued to work at the stage of childbirth when they had the childcare leave system in their company. Regarding utilization of the leaves in relation to the availability of the childcare leave system in the company, Wakisaka (2002) pointed out that the utilization of the leaves was definitely higher when the company provided the childcare leave system. According to these studies, progress of the childcare leave system should increase the number of people who utilize the leaves and the number of women who continue to work at the stage of childbirth/childcare.

On the other hand, Imada (1996) proved that there was no change in the trend for women quitting their job at the stage of childbirth/childcare, based on the data provided by *Shokugyo to Katei Seikatsu ni kansuru Zenkoku Chosa* [Survey on work and family life] (the Japan Institute of Labour, 1991,

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with 30 employees or more also increased from 48.1% in 1993 to 71.2% in 2002.

6 For specific plans of today's measures against declining birthrate, see "the Measures against Declining Birthrate Plus One" (established by the Ministry of Health, Labour and Welfare in 2002) and "Child and Childcare Support Plan" ("About Specific Action Plans for Primary Measures based on the Outline of the Measures against Declining Birthrate Society" established by the Committee for the Measures against Declining Birthrate Society in 2004). "Measures against Declining Birthrate Plus One" is described by the Cabinet Office (2004) and "Child and Childcare Support Plan" by the Cabinet Office (2005).

hereinafter "1991 Survey").[7] In Japan many women quit their job for marriage, childbirth and childcare, creating two peaks on the curve of women's workforce rate by age, one in the young generation and the other in the middle-to-higher-age generation, and making a sharp drop of the workforce rate for marriage, childbirth and childcare. This forms the well known "M-shape" curve. Although the bottom of the M-shape curve lifted up with time, this rise was only a result of increase of unmarried women, increase of women who continued to work at marriage and increase or earlier realization of women to participate in work again after childbirth when cohorts are compared, taking into consideration of life events. The job continuity did not increase, however, at the stage of childbirth/childcare.

This observation is based on the analysis conducted on those who were born between 1922 and 1966 who were at age between 25 and 69 in 1991. The Childcare Leave Law was put in force in 1992 and therefore those who had experience of childbirth in this period had their first baby before the childcare leave system was spread. Most probably, however, the youngest group at age between 25 and 29 (born between 1962 and 1966) had their subsequent childbirth. Consequently, to verify the effect of the progress of the childcare leave system, it is necessary to analyze the trend in the period starting from 1991. The analysis is therefore conducted to see whether or not the job continuity increased at the stage of childbirth/childcare, including the data of the cohort that is younger than those who were surveyed then.

Shigoto to Seikatsu Chosa [Survey on work and life] (the Japan Institute for Labour Policy and Training, 2005) is used for this analysis.[8] When the survey

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[7] The "Survey on Work and Family Life" (the Japan Institute of Labour, 1991) was the third series of the "Survey on Occupational Mobility and Career" conducted by the previous organization, the National Institute of Employment and Vocational Research. The analysis of *Shigoto to Seikatsu Chosa* [Survey on work and life] included in this paper forms the fourth series of the career survey, in which many questions, for example the questions on career and marriage, were common to the third series. The first survey on women was conducted in 1975, the second survey in 1983, and until the fourth survey it was conducted at the interval of about ten years. For the first and second surveys, see the National Institute of Employment and Vocational Research (1988), and for the third survey, see the Japan Institute of Labour (1995).

[8] 4,000 men and women at age between 30 and 54 were sampled with their spouses from throughout the country for the survey, conducted in the two-stage stratified random sampling method. The samples were interviewed and the placement method

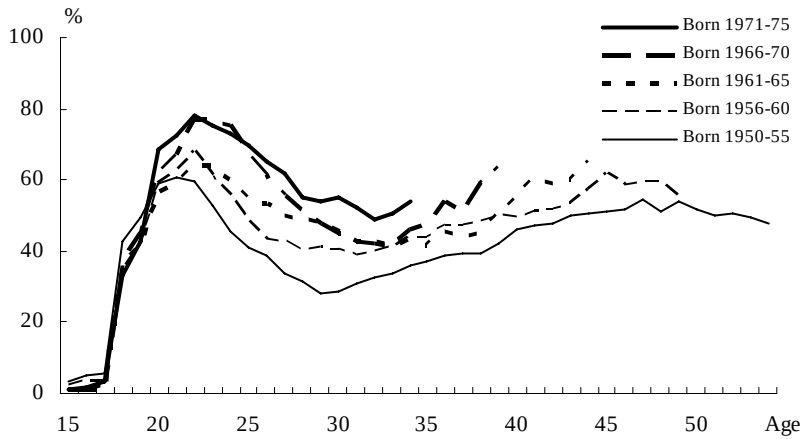
subjects are divided into five cohorts of those born in 1950-55 (age 50-54 at the time of survey), born in 1956-60 (age 45-49), born in 1961-65 (age 40-44), born in 1966-70 (age 35-39) and born in 1971-75 (age 30-34), the cohort born in 1961-65 roughly corresponds to the youngest group of people who were born between 1962-66 surveyed in the 1991 Survey.[9] Imada (1996) called the cohort of 1962-66 the "Equal Opportunity Law Generation," and the cohort of 1961-65 has the following characteristics. The Equal Employment Opportunity Law (established in 1985 and put in effect in 1986, hereinafter called "Equal Opportunity Law") was put in effect when the majority of people from this cohort entered into the labor market at young age, and support systems for balancing work and childcare was expanded for this cohort during the period of their childbirth/childcare with the measures against the declining birthrate such as the Childcare Leave Law and the Angel Plan(the Japan Institute for Labour Policy and Training 2006b, 40-41).[10] The following analysis examines whether

was used for their spouses. The survey was conducted in the period from June 17 to July 18, 2005 by a survey company (Shin Joho Center, Inc.). Responses were returned from 2,448 samples and 1,425 spouses, resulting in the collection rate of 57.9% from the samples (including 230 backup samples). This was the primary survey for the research project "Research on Establishment of Social System That Brings Harmony between Work and Life" conducted by the Japan Institute for Labour Policy and Training in the period from 2003 to 2006. The survey was designed to identify issues presented in establishing social systems that bring harmony between work and life, investigating actual conditions of employment management by companies, community services and family supports, at various life stages, including marriage, childbirth, childcare, independence of children, elderly care, retirement and others. The questionnaire was constructed primarily to ask about career, marriage, childcare, etc. For childcare in particular, detailed questions were prepared for care of each child they had, asking employment conditions during the stage of childcare (availability of the support systems for balancing work and childcare, use of the childcare leaves, etc.), assistance provided by family and relatives for childcare (division of household duties and childcare between husband and wife, helps of relatives for childcare), use of community services (childcare center, preschool childcare center, school children care center, nursery center, helps from neighbors, volunteer support, etc.). For details, see the Japan Institute for Labour Policy and Training (2006b).

9 The survey was conducted in June and depending on the birth month the age may be staggered. As a result, people at the oldest age of 54 were divided into the birth years of 1950 and 1951. For the analysis, the age is used for approximate reference and the birth year is used as the proper reference.

10 Of those who were born in 1961-65, divided by the date of first job taken, 31.4% of them started their first job after the Equal Opportunity Law was established, while of those who finished the university or postgraduate school 71.9% started their first job after this law. Thus, the Equal Opportunity Law was put into effect at the period in

Figure 1. Employment rate and age of cohorts*



* Employment rate at different age of all women for each cohort.
Source: The Japan Institute for Labour Policy and Training, Shigoto to Seikatsu Chosa [Survey on work and life] (2005).

or not the expansion of support systems for balancing work and childcare made job continuity to expand among the cohorts after that of 1961-65, by comparing different cohorts.

2. The M-shape Employment Structure and Job Continuity at Stage of Childbirth/Childcare

Firstly, we observe the employment rate at different ages for each cohort (Employment rate and age), see Figure 1. Each cohort forms the M-shape curve. When comparing cohorts, however, the bottom of the M-shape is higher with younger cohorts. The point here is to identify whether or not the bottom was raised due to the expansion of job continuity at the stage of childbirth/childcare.

Figure 2 shows the trend of employment rate during the period before and after the first childbirth with life events taken into consideration. The figure shows the employment rate one year before the first childbirth, at the time of

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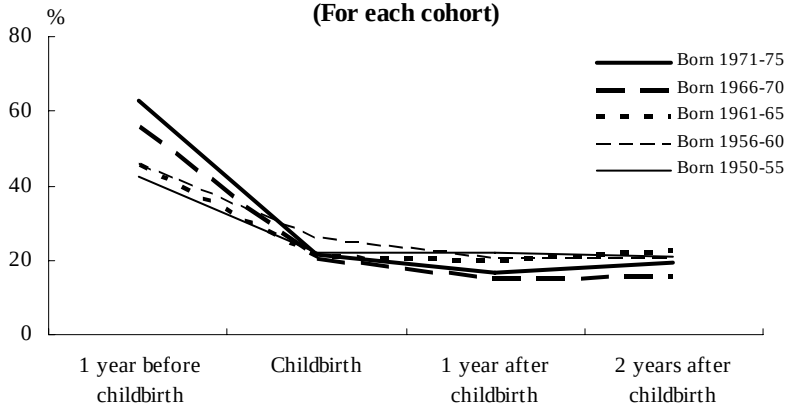
which university graduates and postgraduate school graduates started their first job. This analysis focuses on women who had experience of childbirth in 1991 or later, and 42.8% of those who had childbirth had their first child after the Childcare Leave Law was put into effect.

Figure 2. Employment rate before/after first childbirth*
(For each cohort)



* Employment rate of all women who had childbirth.
Source: Same as Figure 1.

first childbirth, one year after the first childbirth and two years after the first childbirth[11]. This figure leads to the following observation.

The employment rate is higher with younger cohorts one year before the first childbirth. The employment rate for three younger cohorts drops sharply during the period of one year before the childbirth. As a result, the employment rate almost matches that of the cohort of the oldest generation at the time of childbirth. The employment rate remains at the almost same level one year after and two years after the first childbirth for all cohorts.

This means that women changed the time to quit their job before the childbirth, but there was no increase in the number of women continuing their job until childbirth. Women are basically pregnant for the period of one year before the childbirth. Younger cohorts also quit their job in this period.

Preceding studies, as it is described above, claim that availability of the childcare leave system promoted job continuity of women at the stage of childbirth and more companies introduced the childcare leave system. In addition, the measures against declining birthrate promoted expansion of childcare centers and improved support systems for balancing work and childcare in various areas. Nevertheless, the job continuity did not increase at the stage of childbirth/childcare.

[11] The time period was calculated based on the year and month of the first childbirth.

III. Job Continuity Group at Stage of Childbirth/Childcare

1. Factors Determining Job Continuity of Younger Cohorts

Despite the propagation of the childcare leave system, the employment rate of younger cohorts rapidly drops in the period of one year immediately before the childbirth, the period of pregnancy. Why do they quit their job in this period?

To find out the reasons, we need to look at not only the factors that made job continuity easier with the progress of the childcare leave system, but also other factors that made it difficult for cohorts after 1961-65 to continue their job. We examined the following three possible factors as reasons making it difficult for younger cohorts to continue their job.

The first possible factor is that there was a change in support systems that were effective for job continuity. In Japan, women traditionally relied on parents and other family members who lived in the same house to ease the burden of achieving both work and household duties/childcare. On the other hand, the measures against declining birthrate promoted social assistance, mainly using support systems for balancing work and childcare provided by companies and childcare services provided by communities. As the primary support systems changed from family supports to social ones, it may be possible that those who continued their job even without the childcare leave system now have to quit their job.

The second possible factor is that the revision of the Labour Standards Law with introduction of the Equal Opportunity Law substantially deregulated the provision of women's protection that was effective before, causing women to leave their job. The revision significantly supported women in expanding the job range, while it is possible that it made it difficult for women to continue the job when they were engaged in long-hour work, night work, dangerous work, or similar work at the stage of childbirth/childcare.

The third possible factor is the fact that the childcare leave system was not applied to many of the non-regular employees, possibly making them to leave their job. Fixed-term contract is used for many non-regular employees, including part-timers, contract workers and dispatched workers. These fixed-term employees did not have guarantee of utilization of the childcare leaves until the Revised Child-care and Family-care Leave Law was put in effect in April 2005. It is possible that fixed-term employees left their job before their childbirth.

In short, it is possible that factors determining job continuity are changing for younger cohorts in comparison to older cohorts. Consequently, it is possible that the number of those who continued their job did not increase while the childcare leave system progress due to other groups of people who quit their job for these other factors.

The above points are summarized into the following hypothesis.

Hypothesis: Factors determining job continuity are changing.

This hypothesis has the following subordinate hypotheses.

(1) There is a change in the support systems for balancing work and childcare that are effective for job continuity.
(2) Some of the job categories are difficult for women to continue.
(3) Non-regular employees quit their jobs.

The above hypotheses are verified by dividing cohorts as indicated below. For this verification, the two cohorts, born 1950-55 and 1956-60, are integrated into one group of 1950-60 and it is called the "Pre Equal Opportunity Law Generation." The three cohorts, born 1961-65, 1966-70 and 1971-75, are integrated into one group of 1961-75 and it is called the "Post Equal Opportunity Law Generation."

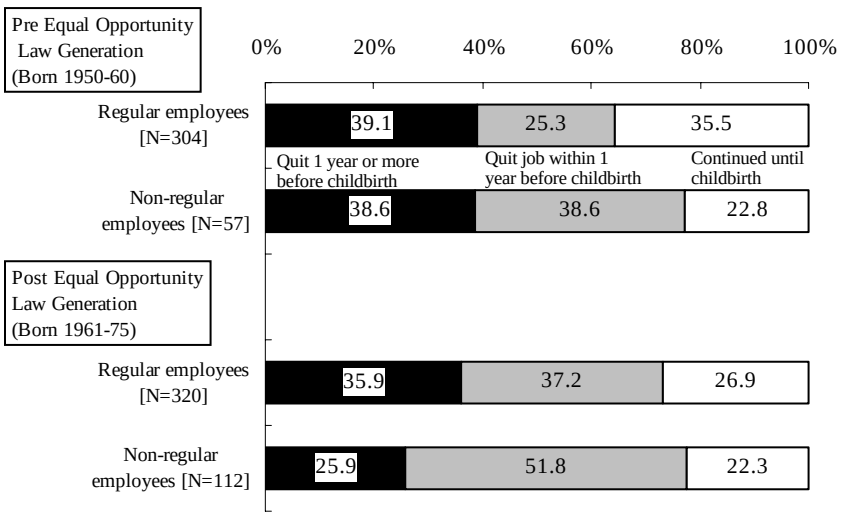
2. Factors Determining Job Continuity before the First Childbirth

Figure 3 shows the distribution of three groups of women taken from Figure 2 (the group that quit their job one year or more before their childbirth, the group that quit their job during the period of one year immediately before the childbirth, the group continued to work until the childbirth) by type of employment immediately before the first childbirth.[12] This figure leads to the following observation.

(1) The time to quit job differs between the "Pre Equal Opportunity Law Generation" and "Post Equal Opportunity Law Generation." A large

[12] Based on the questionnaire, "department managers and above" and "general regular employees" are defined as "regular employees," and "part-timers, temporary workers and contract employees" and "dispatched workers" are defined as "non-regular employees."

Figure 3. Time to leave job for first childbirth and job continuation until childbirth (type of employment*, for each cohort)



* Type of employment before the first childbirth.
Source: Same as Figure 1.

percentage of the "Pre Equal Opportunity Law Generation" quit their job one year or more before their childbirth, while a large percentage of the "Post Equal Opportunity Law Generation" quit their job during the period of one year before their childbirth.

(2) Within the same cohort, the time to quit differs by type of employment. A large percent of the "regular employees" quit their job one year or more before the childbirth, while a large percentage of the "non-regular employees" quit their job in the period of one year before their childbirth.

The employment rate of the "Post Equal Opportunity Law Generation" sharply drops in the period of one year before the childbirth, one of the general characteristics of this cohort, and it is also due to the fact that a large number of non-regular employees quit their job in this period. As far as this figure is concerned, it can be said that the hypothesis "(3) Non-regular employees quit their jobs" is appropriate.

To identify the specific group of women within the "Post Equal Opportunity Law Generation" who quit their job in this period, multivariate analysis is

conducted to estimate whether or not they continue to work during the period of one year before their first childbirth and to identify factors determining the decision to either continue or quit their job at childbirth.[13]

Logistic regression analysis is used for this analysis. Logistic regression analysis is used to forecast the probability of a specific event that occurs and it is expressed in the equation similar to the following:

$$log\,(P/1-P)=b_0+b_1X_1+b_2X_2+\cdots\cdots b_nX_n \qquad (1)$$

the P indicates the probability of a specific event that occurs. In this context, it is the probability of employment at the time of first childbirth. Logistic regression analysis forecasts the rate of P (employment) over the probability of non-employment (1-P), in other words it forecasts the prospect (P/1-P), using explanatory variables such as X_1, X_2... X_n. The equation (1) is a formulation of this prospect in the logarithmic form.

Table 1 shows a result of logistic regression analysis that estimates factors determining employment and non-employment at the time of first childbirth for women who have experience of employment during the period of one year prior to their first childbirth. In addition to the general breakdown (total), this analysis also includes separate breakdown for the "Pre Equal Opportunity Law Generation" (born in 1950-60) and "Post Equal Opportunity Law Generation" (born in 1961-75) to compare factors determining job continuity between different cohorts.

In addition to cohorts, educational attainment (years of education) and first childbirth age, explanatory variables also include type of employment immediately before the first childbirth, job category immediately before the childbirth, availability of the childcare leave system at the workplace immediately before the childbirth, availability of childcare help from family or relatives for childbirth/childcare (family support), and use/non-use of childcare center, all of which are related to the subordinate hypotheses listed above.

Variables of educational attainment (years of education) and first childbirth age are continuous variables. Cohorts are divided into five category variables,

[13] Also in the "Post Equal Opportunity Law Generation," "regular employees" does not quite show a low rate of quitting the job one year before the childbirth, but their quitting of the job one year or more before the childbirth is related to other life events, such as marriage, etc. This point shall be separately analyzed further in future.

with the oldest generation (born in 1950-55) set as the reference group. For jobs, clerical work is set as the reference group, since it is the largest of all.[14] "Professional and technical" jobs are divided to two categories: "Medicine, education, social insurance and social welfare" that mainly consists of nurses, teachers, and childcare nurses, and another category for other jobs.

Here, support systems for balancing work and childcare includes the childcare leave system, family support, and use of childcare center, which are the primary functions used by companies, families and communities, respectively. The childcare leave system and childcare center is the primary support systems expanded in companies and communities as part of primary support systems in the measures against declining birthrate. Family support includes traditional help of parents for childcare and participation of husband in household duties and childcare, which is one of the recent issues of the measures against declining birthrate.

Consequently, we attempt to determine whether job continuity is maintained when the childcare leave system is not available but if other assistance is available, or job continuity is not maintained when other assistance is not available even if the childcare leave system is available. For this purpose, the childcare leave system, family support and use of childcare center are not processed as individual variables, but they are organized into eight combination category variables for the following cases:[15] "Childcare leave system only,"

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[14] No appropriate samples were available for "Workers in agriculture, forestry or fishery," "Managers and officials" and "Protective service work." A few samples were found for "Transportation" and "Communication," but the number of samples was not large enough for the analysis and they were excluded.

[15] For setting up the combinations, availability of each support systems was determined as follows. For the "Childcare leave system," the answer "Do not know" was sorted as "Not available" since it was virtually "Not available" for that person. For the "Family support," it was sorted as "Available" when there was help of "Own parent" or "Parent of spouse" or when "Division of household duties and childcare between husband and wife" was given any of the following answers: "About 70% by wife and 30% by husband," "Divided evenly between husband and wife" or "Mainly by husband instead of wife." It was sorted as "Not available" when the answer did not include "Own parent" and "Parent of spouse" but when it included "Husband participated in household duties and childcare," "Mainly by wife," and "90% by wife and 10% by husband." Chapter 6 of the Japan Institute for Labour Policy and Training (2006b) indicates that job continuity is higher when it is "About 70% by wife and 30% by husband" than when it is "Mainly by wife." The "Use of childcare center" was deemed "Used" when the answer was either "Using/Used" and "Not used" when the answer was "Not used/No plan to use." "Used" for the childcare

"Family support only" and "Use of childcare center only" when one of the support systems is available but not other two ; "Childcare leave system and family support," "Childcare leave system and use of childcare center" and "Family support and use of childcare center" when two of them are available but not the other one; "Childcare leave system, family support and use of childcare center" when all of them are available; and "None available" when none of them is available. Using "None available" as the reference group, we estimate effects of each category to estimate whether job continuity increases when any of the childcare leave system, family support or childcare center is available even if other types of assistance is not available, or job continuity increases only when multiple sources of assistance are combined.[16]

See Table 1 for the general result of analysis.

First of all, significant differences are found among cohorts. Compared with the reference cohort (born in 1950-55), more women in the cohort of "1966-70" and "1971-75" quit their job during the period of one year prior to their first childbirth. The cohort of "1961-65" also indicates negative effect though it is not significant. The number of women who continue to work until their childbirth does not increase, implying that there is an increase in the number of women in the "Post Equal Opportunity Law Generation" who quit their job during the period of pregnancy. The reason why younger cohorts quit their job more often than older cohorts is examined later by reviewing factors

center also includes those who did not have a job at the time of childbirth but reentered the labor market later.

[16] In the paper published by the Japan Institute for Labour Policy and Training (2006a), Imada and Ikeda analyzed effects of the combination of the "Childcare leave system," "Family support (participation of husband in childcare, living with parent in the same house)" and "Use of childcare services" on job continuity at the stage of first childbirth/childcare, based on information obtained from the "Research Survey on Women's Job and Family Life" (the Japan Institute for Labour Policy and Training, 2003). The conclusion was that significant effect was not found when the "Childcare leave system was the only available support" without family support or use of childcare service, but that significantly positive effect was found when the childcare leave system was combined with family support or childcare service, and that the most significant effect was obtained when all of three were available: Childcare leave system, family support and childcare service. Their survey was conducted in Suginami-Ku and Edogawa-Ku in Tokyo Prefecture and Toyama-City and Takaoka-City in Toyama Prefecture, while this current research was conducted based on the national survey data, using similar combinations as explanatory variables for the analysis. For the "Research Survey on Women's Job and Home Life," see the Japan Institute for Labour Policy and Training (2003).

determining job continuity in the "Pre Equal Opportunity Law Generation" and "Post Equal Opportunity Law Generation".

Also, the general result for the total shows that in the category of education, the job continuity is higher with those who have less number of years, and in the category of job, the job continuity is higher with those who are in "Professional/technical in medicine, education and social welfare" compared with those in "Clerical work." In the category of education, significant effect is only shown for the general result of the total, however, since the oldest cohort (born in 1950-55) has shorter educational attainment than other cohorts, it is possible that they are included in the younger cohorts who quit job in Figures 2 and 3. In the job category, which is reviewed later, the degree of effect largely differs between the "Pre Equal Opportunity Law Generation" and "Post Equal Opportunity Law Generation."

As far as effect of the support systems for balancing work and childcare is concerned, "Childcare leave system only" does not show significant effect compared with "None available." All other combinations show positive effect. The analysis result shows that compared with "None available," job continuity is higher when there is availability of "Family support only," "Use of childcare center only," "Childcare leave system and Family support," "Childcare leave system and use of childcare center," "Family support and use of childcare center," and "Childcare leave system, Family support and use of childcare center." The childcare leave system shows significant effect when it is combined with family support or use of childcare center. The analysis result does not show significant effect for "Childcare leave system only" also when the survey subjects are divided into the "Pre Equal Opportunity Law Generation" and "Post Equal Opportunity Law Generation," which is reviewed in detail later.

Care is needed when concluding that effect is not significant for "Childcare leave system only," since preceding studies indicate that availability of the childcare leave system increases job continuity. The current analysis result, however, shows that in reality there is correlation between the childcare leave system and help of family members and relatives for childcare or use of childcare center, and what was considered as the sole effect of the childcare leave system in the past can be considered as the mutual effect of these.

Therefore, the effect of the childcare leave system that was discussed in the past is statistically considered as a "pseud effect." The fact that the childcare leave system does not provide independent effect does not mean that it does

not provide any effect at all. The analysis result indicates job continuity is higher when the childcare leave system is combined with family support or use of childcare center than when the childcare leave system is not used.

The odds ratio (EXP (effect)) of "Childcare leave system and family support" is higher than that of "Family support only" when these two are compared. Also, the odds ratio of "Childcare leave system and use of childcare center" is higher than that of "Use of childcare center only" when these two are compared. And importantly, the highest effect is achieved by "Childcare leave system, family support and use of childcare center" which are supported by all domains, including companies, families and communities. Combining these three, Childcare leave system, family support and use of childcare center, it makes support more effective in a synergetic manner. Therefore, this analysis result still indicates that the childcare leave system is necessary.

Next, let us see the analysis result of the survey subjects divided into the "Pre Equal Opportunity Law Generation" (born in 1950-60) and "Post Equal Opportunity Law Generation" (born in 1961-75). When comparing these two, significant effects are found with different determining factors.

First of all, there is effect of the job category. For both cohorts, job continuity is consistently higher for those who are in "Professional/technical in medicine, education, social insurance and social welfare" than those who are in "Clerical work." Comparison of the odds ratio, however, shows that the effect is lower with the "Post Equal Opportunity Law Generation." In the "Post Equal Opportunity Law Generation," the difference is reduced between "Professional/ technical in medicine, education, social insurance and social welfare" and "Clerical work." This implies that there is difficulty in continuing the job.[17] It also implies that regular employees are also quitting their job to avoid the burden of long working hours or night work.

Still larger differences are observed with the effect of the support systems for balancing work and childcare.

Let us see the "Pre Equal Opportunity Law Generation" first. Compared with "None available," more significant effect is observed with "Use of childcare center only," "Childcare leave system and family support," "Family support

[17] In the traditionally sustainable job category of clinical nurses, teachers and childcare nurses, there are an increasing number of other professionals of diversified job descriptions. A separate research shall be conducted to analyze this issue in detail.

and use of childcare center" and "Childcare leave system, family support and use of childcare center." It should be noted that significant effect is found when family support is combined. In the "Post Equal Opportunity Law Generation," on the other hand, with exception of "Childcare leave system, family support and use of childcare center" that has all three support systems, no significant effect is found with "Childcare leave system and family support" and "Family support and use of childcare center" though these have family support. In place of these, significant effect is found with "Childcare leave system and use of childcare center." This implies that there is a shift of effective primary support systems for job continuity from family support to social ones. There is another shift of effective support systems that are combined with the childcare leave system, which is a shift from "Childcare leave system and family support" to "Childcare leave system and use of childcare center."

More importantly as for the effect of the childcare leave system, none of the combinations is effective without the childcare leave system in the "Post Equal Opportunity Law Generation." Significant effect is found only with two combinations: "Childcare leave system and use of childcare center" and "Childcare leave system, family support and use of childcare center." In other words, the combination of "Childcare leave system and use of childcare center" is required to improve job continuity, and the odds ratio shows further improvement of job continuity when family support is added to the combination. It implies that the requirement of the childcare leave system is still higher in the "Post Equal Opportunity Law Generation."

Based on the above result of analysis, let us now examine subordinate hypotheses under the hypothesis "Factors determining job continuity are changing."

The hypothesis "(1) There is a change in the support systems for balancing work and childcare that is effective for job continuity" is appropriate, since support systems with significant effect differ between the "Pre Equal Opportunity Law Generation" and "Post Equal Opportunity Law Generation."

The hypothesis "(2) Some of the job categories are difficult for women to continue" is appropriate, since effect of "Professional/technical in medicine, education, social insurance and social welfare" is less with the "Pre Equal Opportunity Law Generation" than the "Post Equal Opportunity Law Generation."

The hypothesis "(3) Non-regular employees quit their jobs" is supported in

Figure 3 of the analysis result, but type of employment does not directly show significant effect when other factors are considered. This is due to the fact that effect of type of employment is absorbed by both job category and support systems for balancing work and childcare. Non-regular employees show the tendency of quitting their job due to the changes made in the effect of the support systems for balancing work and childcare as follows. For the "Pre Equal Opportunity Law Generation" job continuity is promoted when "Use of childcare center only" and "Family support and use of childcare center" are available regardless of type of employment, while for the "Post Equal Opportunity Law Generation" such significant effect has disappeared and job continuity can be enhanced only when the childcare leave system is combined, such as "Childcare leave system and use of childcare center" or "Childcare leave system, family support and use of childcare center." Consequently, the result of analysis suggests that, even after the Childcare Leave Law was established, fixed-term employees quit their job because the childcare leave system has not been applied to this group until recently. From this point of view, the hypothesis "(3) Non-regular employees quit their jobs" is appropriate.

Therefore, the hypothesis "Factors determining job continuity are changing" can be summarized as follows. There has been a loss of effectiveness of family support, which was effective for job continuity for the "Pre Equal Opportunity Law Generation," and of "Use of childcare center only," which was also available to non-regular employees. Instead of these, more effect is shown with "Childcare leave system and use of childcare center." In the job category, "Professional/technical in medicine, education, social insurance and social welfare" is losing its effect for people in the "Post Equal Opportunity Law Generation." From this point of view, the hypothesis "Factors determining job continuity are changing" is appropriate.

On top of the group of women in the "Pre Equal Opportunity Law Generation" who has continued to work, the number of women who continue to work should increase, if more women are enabled to continue to work with expansion of the childcare leave system and childcare center under the measures against declining birthrate. In reality, however, women in the "Post Equal Opportunity Law Generation" are quitting their job for reasons for which women in the "Pre Equal Opportunity Law Generation" would not have quit. This is the possible reason why the job continuity does not expand.

Table 1. Factors determining job continuation in the period of one year prior to the first childbirth

Explained variable	Emloyment/Non-employment at childbirth (employed = 1, Not employed = 0)					
Subjects of analysis	Total		Pre Equal Opportunity Law Generation (Born 1950-60)		Post Equal Opportunity Law Generation (Born 1961-75)	
	Effect	Exp (effect)	Effect	Exp (effect)	Effect	Exp (effect)
Cohort (reference: born in 1950-55)						
Born in 1956-60	.286	1.331				
Born in 1961-65	-.400	.671				
Born in 1966-70	-1.054 **	.348				
Born in 1971-75	-.770 *	.463				
Years of education	-.197 **	.821	-.231	.794	-.160	.852
Age of first childbirth	.023	1.023	.052	1.053	.004	1.004
Type of employment (regular = 1, non-regular = 0)	.119	1.127	.249	1.283	.094	1.098
Job category (reference: clerical work)						
Professional/technical (medicine, education, social insurance, social welfare)	1.119 **	3.060	1.416 **	4.121	.902 *	2.464
Professional/technical (others)	.575	1.777	1.015	2.760	.205	1.228
Sales	-.198	.820	-.479	.619	-.056	.945
Services	.023	1.023	-.067	.935	.306	1.358
Skilled workers and laborers	.621	1.861	.488	1.629	.580	1.786
Support systems for balancing work and childcare (reference: none available)						
Childcare leave system only	1.092	2.980	.741	2.097	1.447	4.251
Family support only	1.181 *	3.256	1.134	3.109	1.410	4.097
Use of childcare center only	1.401 *	4.057	2.061 *	7.855	-18.655	.000
Childcare leave system and family support	1.720 **	5.586	1.729 *	5.633	1.834	6.258
Childcare leave system and use of childcare center	2.521 **	12.442	1.792	6.002	2.662 *	14.324
Family support and use of childcare center	1.775 **	5.902	1.743 **	5.716	1.951	7.039
Childcare leave system, family support and use of childcare center	3.302 **	27.158	2.781 **	16.136	3.522 **	33.854
Constant	.015	1.015	-.241	.786	-.815	.443
chi-square	108.686 **		41.836 **		57.486 **	
df	20		16		16	
N	468		201		267	

Note: ** p<.01; * p<.05
Source: Same as Figure 1.

IV. Conclusion and Future Issues

Cohorts have been compared in the analysis to see whether more women are continuing to work with the progress of the childcare leave system and whether there is a change of factors that determine the job continuity. The following findings have been obtained from the analysis.

(1) The "Post Equal Opportunity Law Generation" often quit job during the period of one year prior to the childbirth. The number of women who continue to work to the stage of childbirth has not increased more than that of the "Pre Equal Opportunity Law Generation."
(2) The childcare leave system alone is not effective for job continuity but it is when combined with family support or use of childcare center. For the "Post Equal Opportunity Law Generation," it is important to combine the childcare leave system and childcare center.
(3) Job continuity has become difficult for the "Post Equal Opportunity Law Generation," due to reduced effect of family support for job continuity, increase of non-regular type of employment, and expansion of job categories.

First of all, many women in the "Post Equal Opportunity Law Generation" quit their job during the period of pregnancy. Introduction of the Equal Opportunity Law and Childcare Leave Law has reorganized the system to support job continuity. Among all, the childcare leave system has been actively expanded under the measures against declining birthrate. Nevertheless, more younger women quit their job during the period of pregnancy. To stop this trend, support systems need to be enhanced further.

This, however, is not meant to deny the effect of the childcare leave system. To make it effective, the childcare leave system also requires family support or childcare center to be available. For the "Post Equal Opportunity Law Generation," in particular, it is important to have childcare center available in addition to the childcare leave system. It is possible that active expansion of these two types of social support under the measures against declining birthrate contributed to job continuity for the "Post Equal Opportunity Law Generation."

There are, however, new factors that make it difficult for the "Post Equal Opportunity Law Generation" to continue the job. Firstly, there is increasing difficulty in continuing to work through family support. The practical form of

family support seems to be changing from traditional ways, typically provided by parents living in the same house. To supplement the reduced effect of family support for job continuity, participation of husband in household duties and childcare as well as social support needs to be expanded further.

Secondly, with increasing importance of social support for job continuity on one hand, fixed-term employees have had difficulty continuing to work, since the childcare leave system was not applied to this group. Starting from April 2005, however, fixed-term employees are also eligible for utilization of childcare leaves as long as they meet specific conditions. Although the effect of this support is still to be seen, the job continuity is expected to expand to non-regular employees once the application of the childcare leave system is enlarged.

Thirdly, there is difficulty of job continuity due to expansion of job categories for women. The result of analysis indicates that the number of regular employees who quit their job is increasing due to long working hours and night work. The Labour Standards Law and the Child-care and Family-care Leave Law provide for limitation of overtime and night work during the period of pregnancy/childbirth and childcare. The Equal Opportunity Law defines obligations to establish provisions for health management during the period of pregnancy and after childbirth. Nevertheless, women are quitting their job before their childbirth and supports needs to be further intensified.

In summary, job continuity has become so difficult to offset effect obtained by the combination of childcare leave system and childcare center. For women to go back to work after quitting their job once during the period of pregnancy, it is important to enhance support systems for job continuity during the period of pregnancy in addition to the childcare support. With introduction of the " the Promotion of Supporting the Development of the Next Generation Law," more companies and local governments are expected to actively improve support systems. To enhance effect of support systems, it is important to systematically enhance support systems so as to achieve synergetic support of companies, families and local communities.

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Australia
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Research Report

The findings of research activities undertaken by JILPT are compiled into Research Reports (in Japanese). Below is a list of the reports published from August to October 2006. The complete text in Japanese of these reports can be accessed from the JILPT website. We are currently working on uploading abstract of the report in English onto the JILPT website as well.

No.72 *Employment Behavior and Transition Process of Youth in Metropolitan Areas: For Comprehensive Transition Support* (November 2006)
No.73 *For Expanded Use of the Nursing Care System: Report on "Status of Using a Nursing Care System"* (December 2006)
No.74 *Survey and Research Report on Corporate Governance/CSR and Human Resource Strategies of Corporations* (March 2007)

＊JILPT website: *URL: http://www.jil.go.jp/english/index.html*

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JILPT Research Activities

Study Workshop on Transition

The Japan Institute of Labour Policy and Training (JILPT) held Workshop on Transition Policy for Young People with Low Education Background in Tokyo on February 26 and 27, 2007. The goal of the workshop was to identify an implication for desirable policies through comparative examination on status, background, issues and prospects in employment and transition support for youth with low academic background in advanced countries. The reports (in English) presented in the workshop are listed below. The JILPT website contains the whole texts of the reports.

U.S.A.
Stone, James III, Professor, University of Minnesota, *Helping Low Achieving Youth Acquire Work Readiness: The Role of Career and Technical Education*

Japan
Hori, Yukie, Researcher, JILPT, *The Situation of Transitions from School to Work and, Related Support Systems in Japan*

France
Moncel, Nathalie, Senior Researcher, Céreq, *Recent Trends in Education and Labour Market Policy for School-to-Work Transition of Secondary Educational School Leavers in France*

Korea
Insoo Jeong, Senior Research Fellow, Korea Labor Institute, *The Status of Youth Unemployment in Korea and Policy Tasks*

U.K.
Furlong, Andy, Professor, University of Glasgow, *Supporting the Transitions of Vulnerable Youth: U.K. Perspectives*