

Effects of Work-Life Balance Programs on Female Employment

Naomi Kodama

Ministry of Economy, Trade and Industry

I. Introduction

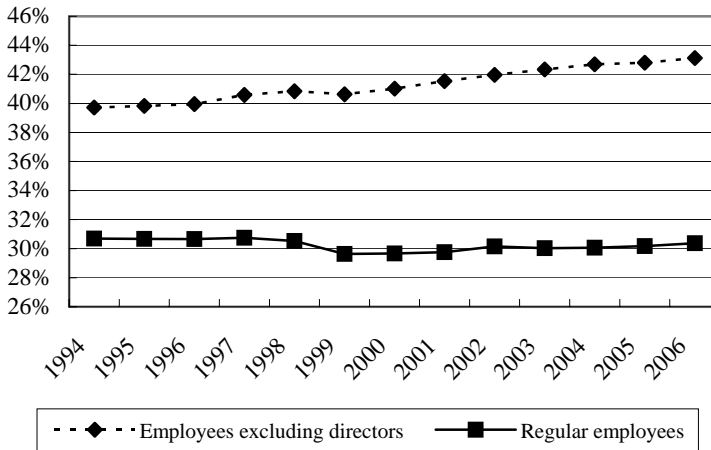
Presently in Japan, efforts are being made to introduce “the work-life balance programs,” notably provision of child care leave and family care leave and reduction of long-time work, which aim to balance work and private life and to help workers make their jobs and domestic roles such as parenting compatible. Nevertheless, not much progress has been observed and the effects of these programs are widely questioned. In this paper, I would like to analyze how child care leave, which is one of the work-life balance programs, affects the employment and recruitment of female workers. The results of my analysis imply that companies consider it a cost for their female employees to take child care leave.

In Japan, labor demand decreased more radically than ever before due to a long-term economic recession from the latter half of the 1990s through early 2000s. In 2002, the unemployment rate in Japan reached 5.4%, a record high in the past 30 years, whereas the ratio of effective labor demand to effective labor supply fell to as low as 0.51 fold, worst in the last three decades. Employment requirement diffusion index (D.I.) also indicated an extremely strong feeling of labor surplus, suggesting that restrictions presented in the labor demand side mostly determined the balance between labor demand and supply during the period from the latter half of the 1990s to early 2000s.

Around the same time, in the decade from 1994 to 2004, the female worker employment rate (the ratio of female employees to all employees excluding directors) in Japan increased by 3.0% from 39.7% to 42.7%, while the ratio of female regular employees (to the total number of regular employees) dropped by 0.6% from 30.7% to 30.1%, again during the above-mentioned period.

For the last ten years, companies have strived to reduce the number of regular employees by replacing them with temporary workers in the aim of cutting fixed costs. Consequently, the few remaining regular employees have been asked for even better performance and further commitment than ever. In pursuit of such higher performance and commitment, companies tried to employ

Figure 1. The ratios of female employees to all employees and to regular employees



Source: Management and Coordination Agency (Ministry of Public Management, Home Affairs, Posts and Telecommunications from 2001), Statistics Bureau, *Report on the Special Survey of the Labour Force Survey* (from 1996 to 2001, all in February) and Ministry of Public Management, Home Affairs, Posts and Telecommunications (Ministry of Internal Affairs and Communications since 2004), Statistics Bureau, *Annual Report on the Labour Force Survey (Detailed Tabulation)* (from 2002 to 2006, annual average).

male workers who, on average, have longer years of service, lower turnover ratio, and more accumulated human capital. This is considered to be a reason for the decrease in the number of female regular employees.

There is also a possibility that implementation of “support programs for balancing work and family” and “programs for equal opportunity for both sexes” in the last two decades might have been affecting the employment of female workers. In 1986, “the Equal Employment Opportunity Law” was enforced, followed by “the Child Care Leave Law” enacted in 1992 and “the Child Care and Family Care Leave Law” established in 1995 (the section relevant to the family care leave came into effect in 1999). At the same time, policies were administered in the direction toward equal treatment of male and female employees with regard to recruitment, placement, promotion, etc., as well as toward elimination of job title classifications such as *Sogoshoku* (career-track employees) and *Ippanshoku* (rank-and-file employees).

Looking at the correlation between the use of child care leave and employment of female workers from the viewpoint of enterprises, an advantage

is that entitling female employees to take child care leave facilitates female human resource development as it extends the length of their service, while there are also disadvantages of expanded uncertainty over their service length and increased costs associated with employment of temporary workers to substitute the absentees.¹ Even now when the provision of child care leave is obligated by law, the actual status of taking child care leave largely varies from one company to another depending on its operation and human resources management. This study examines the cross-sectional and time-series relationship between the ratio of child care leave takers and the ratio of female employment. The effect of wage disparity within enterprises on this relationship is also examined.

Section II reviews existing studies concerning the child care leave and employment of female workers. Explanations follow as to my analysis framework and data, in Section III and IV respectively. Section V exhibits the results of the analysis, and then policy implications will be discussed in Section VI.

II. Preceding Studies on the Child Care Leave and Employment of Female Workers

Studies in respect of relation between the child care leave and employment of female workers conducted in Japan include: Kawaguchi (2002), Abe and Ouchi (1998), Wakisaka (1999, 2001), Ohtake (1999), Morita (2005) and Tomita (2002).²

In reference to a questionnaire survey conducted in 2000 on the member companies of Osaka Chamber of Commerce and Industry and Kansai Economic

¹ According to Wakisaka (2002), only 20.7% of listed companies consider the child care (family care) leave system “not problematic at all.” The biggest problems they find include: “difficulty in obtaining replacement personnel (50.6%),” and “treatment of replacement personnel after leave-takers’ return to workplace (41.0%).”

² Based on the data obtained in *The Survey on Work Perception of Female Employees and Their Working Behaviors* conducted by the Japan Institute of Labour in 1996, Morita and Kaneko (1998), one of the analyses that employ worker-oriented data, proved that the child care leave system does extend the service length of female employees. Sigeno and Okusa (1998) also showed that the child care leave system is effective in promoting extension of service length, using the individual data available from *The Japanese Panel Survey of Consumers* conducted by the Institute for Research on Household Economics.

Federation, Kawaguchi (2002) stated that no substantial results were gained to verify that family-friendly measures or programs for equal opportunity for both sexes had actually hampered employment of female workers.

Using the data collected via a survey performed in 1992 and 1995 by a job information magazine targeted at university students, Abe and Ouchi (1998) performed a regression analysis in respect of the proportion of recruitment of new female graduates and that of recruitment of female career-track employees, on the basis of presence/absence of a child care leave program. While the availability of child care leave programs had no significant effect on the ratio of recruitment of new female graduates, it did adversely affect the proportion of recruitment of female career-track employees.

Based on the results of an analysis incorporating annual activity reports of the health insurance associations, Wakisaka (1999) revealed that the higher the ratio of female employees, the lower the ratio of those who take child care leave. Furthermore, with reference to the Basic Survey on Women's Employment Management in 1995, 1996, and 1997, Wakisaka (2001) conducted a regression analysis of the ratios of female employees with the least-square method using the number of employees, availability of child care leave programs, presence/absence of labor union, and industry dummies. The results showed that the child care leave system served as a significantly negative coefficient, which seems to indicate that the system itself hinders recruitment of female workers. When applying this regression analysis by business scale, however, although the coefficient of child care leave system was once again significantly negative among both small-sized enterprises with five to 29 employees and companies with 30 employees or more; when it comes to large enterprises with 500 employees or more, the coefficient turned out to be positive if not to a significant degree. Wakisaka interpreted this finding to mean that "in small-sized enterprises, providing a child care leave system imposes a cost burden (or at least their top management are made to believe so), resulting in hesitation to hire women in relative terms."

Ohtake (1999) pointed out that even though the Child Care Leave Law functioned as a beneficial system for presently employed workers, it might reduce the employment opportunities for those who were not hired yet.

Utilizing the Employment Trend Survey, Morita (2005) took note of the time difference in legislation of the child care leave system between for small- and medium-sized enterprises and for large-scale companies, to verify whether

or not the child care leave system had adversely affected labor demand for female workers by altering the perception of companies on costs that female workers could incur. The results of her analysis did not necessarily indicate that the enforcement of the Child Care Leave Law in 1992 had any impact on new employment of female workers, yet they at least revealed that the 1995 revision of the Law discouraged new employment of female workers in small companies which came under the scope of the Law since the revision, and that it might have had a negative influence on employment of female applicants who wished for career change, especially those aged between 35 and 44.

Equally sampling companies both with and without female directors or managers, Tomita (2002) analyzed the effects of the ratio of child care leave takers on the ratio of female worker recruitment. As a result, it was learned that, among companies having no female directors or manager, the higher the ratio of child care leave takers was, the lower the proportion of female employees became, although it was not statistically significant. On the other hand, among companies having female directors or managers, the coefficient reflecting the ratio of child care leave takers had a positive effect on the proportion of female worker recruitment. It is true that the child care leave could be a cost for companies on a short-term basis, but investment in cultivation of female employees should increase the return in the long run as female employees who were on child care leave come back to work after delivery of their baby. Thus, Tomita concluded that companies with female directors or managers tended to recruit more female workers, in response to an increase in the number of female employees who took child care leave.

Among the above-presented existing studies, Kawaguchi (2002) and Abe and Ouchi (1998) analyzed the relation between the child care leave system and employment of female workers, whereas Wakisaka (1999, 2001) and Tomita (2002) analyzed the correlation between the ratio of child care leave takers and employment of female workers. In Japan, an increasing number of companies have adopted the child care leave system since the enforcement of the Child Care Leave Law in 1992. At present, the proportion of companies that employ the system has reached up to 99.9% in 2005.³ Having this in mind, I will perform an analysis in this paper on the basis, not of the child care leave

³ Large enterprises with 500 employees or more (The Basic Survey on Women's Employment Management).

system itself, but of its operational performance, namely the ratio of child care leave takers.

III. Framework of the Analysis

The impacts that the use of child care leave and other human resources management measures have on the employment of female workers at the level of individual enterprises are understood in this paper as follows.

First, under the assumption of the simplest labor market, wages of male and female workers determined in this assumed labor market reflect the productivity of each male/female worker, in other words, difference in their individual human capital. From the company's point of view, if the ratio of female employees taking child care leave rises, the productivity of female employees will decline by the ratio of female employees taking child care leave multiplied by lost productivity due to the use of child care leave.⁴ The lost productivity here refers to the costs incurred on a company by its employees' use of child care leave, due to, for example, obsolescence of employee human capital because of discontinuation of career development, inactivity of internal and external human networks, as well as losses in terms of manpower management resulted from inability for the company to work out a personnel management plan in advance as it is impossible to pencil in the exact delivery dates beforehand. Facing such circumstances, the company ends up with making a choice of either: a) cutting down the salary of female employees, and b) reducing the number of female workers.⁵ Although the provision of child care leave is now a legal obligation, the Equal Employment Opportunity Law at the same time makes it difficult for companies to set different amounts of

⁴ The Child Care Leave Law stipulates that when any worker irrespective of sex applies for the use of child care leave, his/her employer is obliged to allow him/her to take such leave, which means that those eligible to take child care leave are not necessarily limited to females. In fact, however, female workers made up 98.1% and 98.0% of the total number of workers who took child care leave in 2002 and 2005, respectively (*The Basic Survey on Women's Employment Management*).

⁵ Ruhm (1998) analyzed how changes in child care leave programs in nine European countries from 1969 to 1993 affected employment and wages of female workers, using the method of difference-in-difference-in-difference (DDD). The results revealed that child care leave contributes to boost the employment of female workers (i.e. the number of employed female workers compared to the national population), but that it lowers the wages paid for female workers.

salary for male and female employees who have the same attributions. As a result, companies rather naturally choose either to reduce the number of female workers or to recruit only such females who are more capable than average male counterparts and deserve an extra expense imposed by their use of child care leave.

In addition, under the situation that the high ratio of child care leave takers results in restriction on the employment of female workers, I will discuss whether or not a certain way of employment management, which accommodates employee-specific customization so that the company can work out rewards according to each worker's productivity by widening internal wage disparity, could ease the restrictive effect on female worker employment caused by the use of child care leave. If such customized management brings about more positive effects in enterprises with high ratio of child care leave takers rather than in those where child care leave is less often taken, it could be considered that a conscientious employment management personalized for individual employees would prevent the ratio of female worker employment from deteriorating. Conversely, if the customized management has smaller effects in companies that have high ratio of child care leave takers than in those with low ratio of child care leave takers, the employee-specific customized management would be regarded as providing little positive impact in the former enterprises.

Here, this paper examines the relation between the ratio of child care leave takers and utilization of female personnel, focusing on differences in the ratio of child care leave takers according to each company.

IV. Data

In this paper, the Basic Survey on Wage Structure conducted in 1993, 1996, and 2001, the Establishment and Enterprise Census of Japan in 1996 and 2001, and the Basic Survey on Women's Employment Management in 2003⁶ are referred in order to investigate the correlation between the ratio of child care leave takers and those of female worker employment and female worker

⁶ The 2003 ratio of child care leave takers is used here due to data limitation. It means that my argument is based on an assumption that there will not be any temporal change in the relative level of the ratio of child care leave takers in each enterprise in comparison with the total average, even though the standard of the ratio has been enhanced as a whole.

recruitment.

“The ratio of child care leave takers” used in this analysis is the value calculated by dividing the number of females that take child care leave with the total number of female employees. Although this ratio can also be defined by dividing the number of female child care leave takers with that of employees who actually gave birth to a baby, this calculation naturally excludes from the denominator female employees who quit the company after delivery. Therefore the total number of female employees is intentionally used here instead.⁷

Here, the sample enterprises are divided into two groups depending on if the ratio of child care leave takers is either higher or lower than the total average, and then examine differences in the ratios of employment and recruitment of female workers among the respective groups. The reason for mainly taking into account the results obtained by incorporating the simple average out of all industries irrespective of enterprise size is to simultaneously observe, for instance, differences in the ratios of female employees and those of female worker recruitment between industry types with longer average service length and higher ratio of child care leave takers and those with shorter average service length and lower ratio of child care leave takers.

Note that the term “ratio of female worker employment” used in this section refers to that of female regular employees to the total number of regular employees. “The ratio of female worker recruitment,” on the other hand, is that of recruited new female graduates to the total number of recruited new graduates found in the Basic Survey on Wage Structure.

The term “wage disparity within enterprises” used in this analysis indicates the variance (standard deviation of error term) in salary among employees who belong to a same company sharing the same gender, years of experience, educational background, residing region, and service length (Refer to the Appendix).

The total number of the sample enterprises is 5,723, and the industry

⁷ The ratio of child care leave takers adopted in this analysis can be calculated as follows: (the number of female child care leave takers/the number of employees who delivered a baby) \times (the number of employees who delivered a baby/the number of female general workers). This leaves one problem unsolved, that is, it is impossible to tell either of the following two possibilities is actually responsible for the fact that the relevant ratio is low: 1) it is difficult to take child care leave, and 2) within the age structure of target employees, those in childbearing age are simply limited in number.

breakdown is as follows: wholesale, retail, and restaurant industry = 33%, manufacturing industry = 19%, finance and insurance industry = 18%, and service industry = 14%. The average scale of the enterprises is 96 persons, and that of the corporations is 3,473 persons; most of these corporations are large-sized. Among the sample enterprises, the average ratio of female regular employees is 25%, that of female worker recruitment is 41%, and that of child care leave takers is 2.1%. These numbers are descriptive statistics of the 2001 research, yet the range of industry types and enterprise sizes in both 1993 and 1996 studies are also very similar.

V. Analysis Results

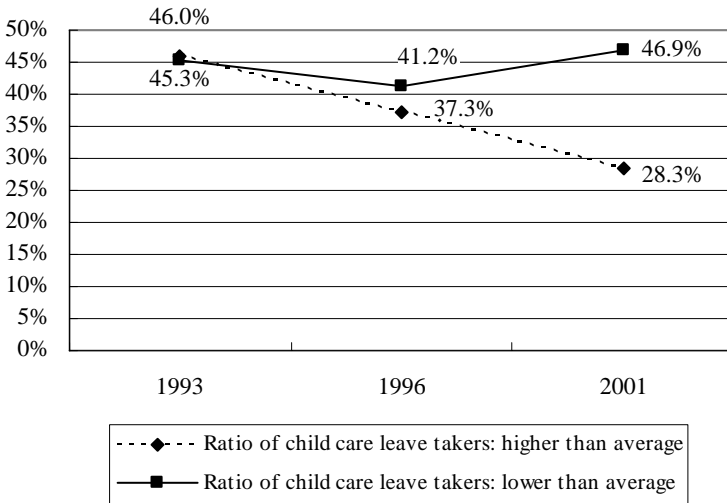
1. Impacts That the Ratio of Child Care Leave Takers Have on Employment of Female Workers

First, let me consider what kind of impacts the costs that companies bear in relation to the increase of child care leave takers have on employment of female workers.⁸

In 1993, immediately after the introduction of the child care leave system, both enterprises with a high ratio of child care leave takers and those with a low ratio showed practically no difference in the ratio of female worker recruitment (the ratio of female worker recruitment among enterprises that had a higher than average proportion of child care leave takers was 46.0%, while that among enterprises with a lower than average proportion of child care leave takers was 45.3%). As years passed by, however, the difference became unignorable. In 2001, the ratio of female worker recruitment in enterprises where the ratio of child care leave takers was lower than average was 46.9%, whereas that in companies where the ratio of child care leave takers was higher than average turned out to be as low as 28.3%, presenting a remarkably

⁸ The analysis below is based on the assumption that companies reasonably determine the ratio of female worker employment and that of female worker recruitment. This assumption is fairly well supported, as in a hearing survey that I conducted targeted at enterprises, many of the subject companies exposed to international and domestic competition responded that, upon recruitment, they did not discriminate job applicants on a basis of gender or nationality, as long as they were considered to have potential to contribute to the company. Kodama, Odaki and Takahashi (2005) also verified that the ratio of female worker employment had neither positive nor negative effect on the profit rate.

**Figure 2. The ratios of female worker recruitment
by ratio of child care leave takers**



substantial gap of 18.6% (Figure 2).

Table 1 shows the ratios of female worker recruitment by industry as well as by the ratio of child care leave takers in 2001. In the wholesale, retail, and restaurant industry, the ratio of female worker recruitment among enterprises with a high ratio of child care leave takers was 28.8%, while that among companies with a low ratio of child care leave takers was 47.8%. In the manufacturing industry, the ratio of female worker recruitment among enterprises with a high ratio of child care leave takers was 26.1%, while that among companies with a low ratio of child care leave takers was 35.3%. In the finance and insurance industry, the ratio of female worker recruitment among enterprises with a high ratio of child care leave takers was 43.3%, while that among companies with a low ratio of child care leave takers was 71.0%. In the service industry, the ratio of female worker recruitment among enterprises with a high ratio of child care leave takers was 31.6%, while that among companies with a low ratio of child care leave takers was 42.1%. Looking at the figures by industry, the ratio of female worker recruitment among enterprises with a high ratio of child care leave takers is lower than that among enterprises with a low ratio of child care leave takers in almost all industries. In the industries such as “finance and insurance,” “real estate,” “electricity, gas, heat supply,

Table 1. The ratios of female worker recruitment by industry and by the ratio of child care leave takers

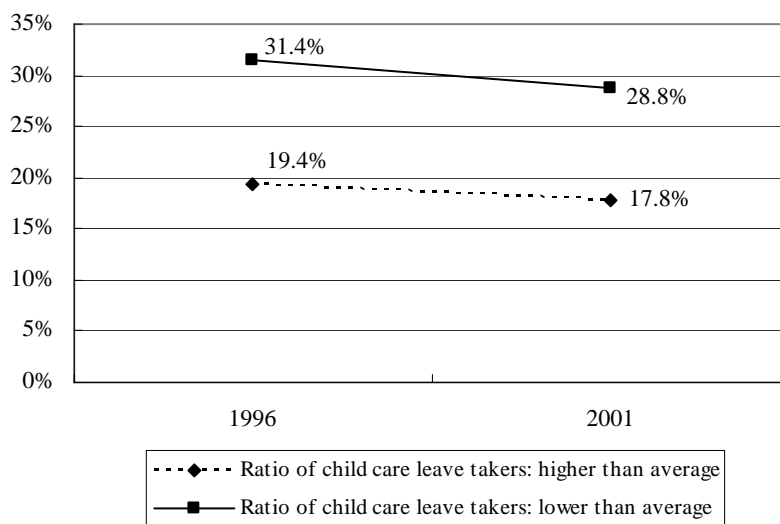
	Ratio of child care leave takers (%)		
	Low	High	Total
Mining	30.0%	66.7%	43.8%
Construction	25.6%	15.1%	21.7%
Manufacturing	35.3%	26.1%	31.7%
Electricity, gas, heat supply & water supply	40.8%	17.0%	20.9%
Transportation & telecommunication	42.9%	27.8%	35.0%
Wholesale, retail & restaurant	47.8%	28.8%	41.8%
Finance & insurance	71.0%	43.3%	64.9%
Real estate	48.4%	12.0%	46.5%
Service	42.1%	31.6%	38.9%
Total	46.9%	28.3%	40.5%

and water supply,” and “wholesale, retail, and restaurant” where the ratio of female worker recruitment is high, the gap in the ratio of female worker recruitment between enterprises with a high ratio of child care leave takers and those with a low ratio is large. Meanwhile, in the industries such as “construction,” “manufacturing,” and “service” where the ratio of female worker recruitment is low, the gap is small in the ratios of female worker recruitment between enterprises with a high ratio of child care leave takers and those with a low ratio is small.

The ratios of female worker employment were also high in enterprises with a low ratio of child care leave takers in both 1996 and 2001. In 1996, the ratio of female worker employment among enterprises where the ratio of child care leave takers was higher than average was 19.4%, while that among enterprises where the ratio of child care leave takers was lower than average was 31.4%, leaving a difference of 12.0%. In 2001, the ratio of female worker employment among enterprises where the ratio of child care leave takers was higher than average was 17.8%, and that among enterprises where the ratio of child care leave takers was lower than average was 28.8%, again presenting a difference of 11.0% (Figure 3).

Table 2 shows the ratios of female worker employment by industry as well as by the ratio of child care leave takers in 2001. In the wholesale, retail, and restaurant industry, the ratio of female regular employees among enterprises with a high ratio of child care leave takers was 16.2%, while that among

**Figure 3. The ratios of female worker employment
by the ratio of child care leave takers**



companies with a low ratio of child care leave takers was 20.6%. In the manufacturing industry, the ratio of female regular employees among enterprises with a high ratio of child care leave takers was 19.1%, while that among companies with a low ratio of child care leave takers was 23.9%. In the finance and insurance industry, the ratio of female regular employees among enterprises with a high ratio of child care leave takers was 36.6%, while that among companies with a low ratio of child care leave takers was 54.2%. In the service industry, the ratio of female regular employees among enterprises with a high ratio of child care leave takers was 22.6%, while that among companies with a low ratio of child care leave takers was 26.5%. Looking at the figures by industry, the ratio of female worker employment among enterprises with a high ratio of child care leave takers is lower than that among enterprises with a low ratio of child care leave takers in almost all industries, and the difference is the biggest in the finance and insurance industry.

As observed above, immediately after the introduction of child care leave system when the average ratio of child care leave takers was low, the ratio of child care leave takers had no impact on the recruitment of female workers. However, it was confirmed that as the average ratio of child care leave takers

Table 2. The ratios of female worker employment by industry and by the ratio of child care leave takers

	Ratio of child care leave takers (%)		
	Low	High	Total
Mining	12.6%	12.2%	12.6%
Construction	10.0%	8.9%	9.6%
Manufacturing	23.9%	19.1%	22.0%
Electricity, gas, heat supply & water supply	12.1%	8.6%	9.3%
Transportation & telecommunication	13.7%	10.9%	12.3%
Wholesale, retail & restaurant	20.6%	16.2%	18.7%
Finance & insurance	54.2%	36.6%	50.9%
Real estate	22.4%	24.8%	22.8%
Service	26.5%	22.6%	25.6%
Total	28.8%	17.8%	24.8%

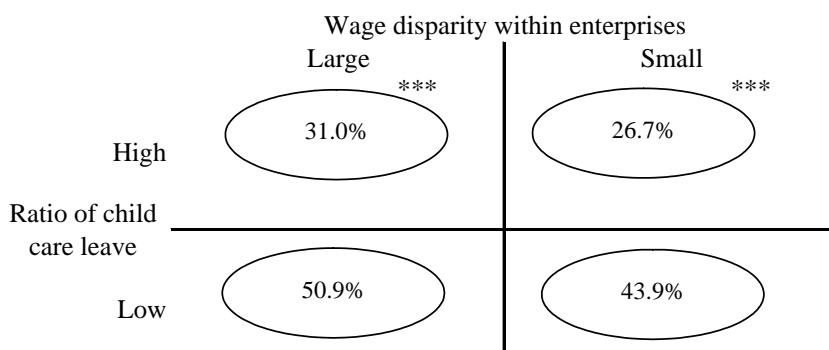
rose, the ratio of child care leave takers started to impose a negative effect on the ratio of female worker recruitment and that the ratio of female worker employment was low in enterprises with a high ratio of child care leave takers. It is possible to infer that the ratio of female worker recruitment has decreased in enterprises with a high ratio of child care leave takers because the use of child care leave helped female employees extend their service length, temporarily eliminating the necessity of recruiting additional female workers. Nevertheless, also taking it into consideration that the ratio of female regular employees was low in enterprises with a high ratio of child care leave takers, it is rather ascribed to the result that companies perceive the use of child care leave by female employees as a cost for them.

2. Impacts That the Ratio of Child Care Leave Takers and Wage Disparity within Enterprises Have on Employment of Female Workers

The next issue to examine is, assuming that the ratios of child care leave takers are the same, how the employment of female workers is affected if wage disparity is significant within an enterprise, which means, supposedly, the enterprise implements customized management or has diversified career paths.

Figure 4 shows the ratio of female worker recruitment compared with the ratio of child care leave takers and wage disparity within enterprises. Comparing the cases where the ratio of child care leave takers is higher than average, when the wage disparity within enterprises is smaller than average, the ratio of

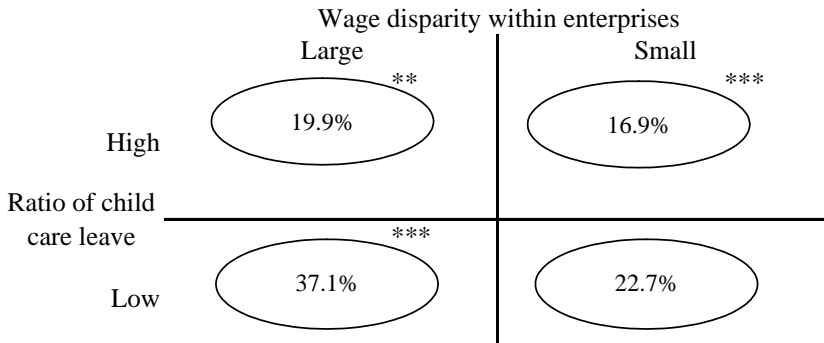
Figure 4. The ratio of female worker recruitment compared with the ratio of child care leave takers and wage disparity within enterprises



female worker recruitment is 26.7%; on the other hand, when the wage disparity within enterprises is larger than average, the ratio of female worker recruitment is 31.0%. Meanwhile, comparing the cases where the ratio of child care leave takers is lower than average, when the wage disparity within enterprises is smaller than average, the ratio of female worker recruitment is 43.9%; on the other hand, when the wage disparity within enterprises is larger than average, the ratio of female worker recruitment is 50.9%. No matter how high or low the ratio of child care leave takers is, the ratio of female worker recruitment is high in the enterprises where wage disparity is significant. However, looking at the degree of wage disparities found within enterprises, it becomes greater when the ratio of child care leave takers is lower.

Figure 5 shows the ratio of female worker employment compared with the ratio of child care leave takers and wage disparity within enterprises. Comparing the cases where the ratio of child care leave takers is higher than average, when the wage disparity within the enterprises is smaller than average, the ratio of female worker employment is 16.9%; on the other hand, when the wage disparity within the enterprises is larger than average, the ratio of female worker recruitment is 19.9%. Meanwhile, comparing the cases where the ratio of child care leave takers is lower than average, when the wage disparity within the enterprises is smaller than average, the ratio of female worker employment is 22.7%; on the other hand, when the wage disparity within the enterprises is larger than average, the ratio of female worker employment is 37.1%. In each case, the ratio of female worker employment is high when the

Figure 5. The ratio of female worker employment compared with the ratio of child care leave takers and wage disparity within enterprises



wage disparity within enterprises is large. However, looking at the degree of wage disparities found within enterprises, it becomes greater when the ratio of child care leave takers is lower.

The results of this analysis revealed that, when the ratio of child care leave takers is high, the employment of female workers is restrained, and that in workplaces where the ratio of child care leave takers is high, even if the wage disparity within the enterprise is large, it does not have so much effect to promote employment of female employees.

VI. Policy Implication

Just after the child care leave system was introduced in 1993, there was no clear difference in the ratio of female worker recruitment resulting from the difference in the ratio of child care leave takers. Thereafter, although in workplaces where the ratio of child care leave takers was low, the ratio of female worker recruitment hardly changed, the same ratio declined in workplaces where the ratio of child care leave takers was high. With respect to the ratio of female worker employment, it tended to be low in enterprises where the ratio of child care leave takers was high. This suggests that the use of child care leave is felt to be a big burden on companies.

Thus, it should be carefully noted that, when companies are encouraged to provide equal opportunities irrespective of gender without paying attention to the difference in productivity, the disparity between male and female employees

who are already hired by a same company becomes small, but there is a risk that female employment opportunities themselves might be eliminated.

In the workplaces where the ratio of child care leave takers is high yet there is a system that enables to reflect the lost productivity due to the use of child care leave in salaries, for instance those with large wage disparity, the decrease in female worker employment was smaller than in those that do not have a similar policy. Nevertheless, even if such salary management is implemented, the ratio of female worker recruitment in the workplaces with the high ratio of child care leave takers is lower than that in the workplaces with the low ratio of child care leave takers. To put it differently, even a framework that enables to reflect in salaries the lost productivity due to the use of child care leave cannot completely eliminate all the burdens that arise from the use of child care leave. It was learned that, on the contrary, in the workplaces where the ratio of child care leave takers is high, the effects that large wage disparity within enterprises has in promoting female worker employment is diminished to a great degree.

As found above, it is inferable that the use of child care leave has been such a burden on companies that they cannot overcome it by simply elaborating on their human resources management. In order to encourage the use of child care leave, it can be considered that companies should not be the only party to bear the burden imposed by their employees' child-rearing efforts; the government and society also need to support it to a substantial extent.

Regarding the relationship between work-life balance programs and company performance, many of the existing studies conducted in the U.S. have demonstrated that the two are positively correlated⁹, whereas those carried out in Japan have given no clear answer. The results of preceding studies performed in Japan in respect of the effects of work-life balance programs (or family-friendly programs) on company performance contradict with each other, providing all the possible outcomes of "no effect," "positive effect" and

⁹ Using the company data available from the U.S. Fortune 500, Clifton (2004) revealed that work-family support programs improve productivity. Arthur (2003) and Arthur and Cook (2004) utilized the event study method to verify how stock prices were affected by family-friendly measures featured in the Wall Street Journal. Consequently, they found that the family-friendly measures and stock prices positively correlated with each other. Roehling, Roehling and Moen (2001) also stated that, based on a set of data extracted from U.S. workers, there was a positive correlation among the flex time policy, informal support from bosses and colleagues, and workers' loyalty.

“negative effect” (Sakazume 2002¹⁰; Kawaguchi and Nagae 2005¹¹; Wakisaka 2006¹²; and Kodama, Odaki and Takahashi 2005¹³). Some studies concluded that work-life balance programs could be effective when combined with equal employment opportunity measures or vocational ability development programs (Perry-Smith and Blum 2000¹⁴; Konrad and Mangel 2000¹⁵; Abe and

¹⁰ Based on the data gathered by a company survey conducted by Japan Productivity Center for Socio-Economic Development in 2001 and those concerning employees who belong to the subject companies, Sakazume (2002) revealed that although diversified family-friendly measures had a positive effect on company performance (changes in ordinary income) but that conventional family-friendly measures and active promotion of such programs had no effect on company performance.

¹¹ Kawaguchi and Nagae (2005) incorporated the event study method to verify the effects of awards given to companies promoting equal employment opportunity and implementing family-friendly measures on their stock prices. The results demonstrated that the awards given to companies administering family-friendly measures boosted their stock prices on a short-term basis, though it brought about a negative effect on the companies who were losing profits, and that the awards given to companies promoting equal employment opportunity triggered a short-term drop in their stock prices.

¹² Wakisaka (2006) developed an index that reflects how family-friendly a company is, by taking into account, for example, overall status of work continuation/termination by female regular employees, availability of child care leave system, and presence/absence of a short-time work system. It was revealed that the companies whose index turned out to be high experienced a negative impact on their sales increase, and at the same time a positive effect on their subjective assessment regarding productivity and performance improvement in comparison with those observed five years before.

¹³ Kodama, Odaki and Takahashi (2005) found that the ratio of female employees and that of profits were both high in enterprises where the following three elements were realized: “disparity in service length between male and female employees is small,” “there is a reemployment system,” and “the ratio of female managers is high,” and that the ratio of profits was not high but that of female employees was high in enterprises where the following five elements were realized: “the ratio of female career-track employees is high,” “assigned overtime is short,” “there is a child care leave system that provides the legally-designated number of holidays or more,” “there is a flex-time system,” and “there is no transfer for female employees.” In other words, the ratio of female employees and company performance were both high in companies who had “equal employment opportunity programs” to encourage equal treatment for male and female employees according to their capabilities and achievements, plus “work-life balance programs” to establish an environment where female employees can continue working for a long period of time by balancing their work and life at the same time, whereas the ratio of female employees was high but company performance was not in companies that only adopted “work-life balance programs.”

¹⁴ Perry-Smith and Blum (2000) who used the data available in the U.S. revealed that the companies adopting various work-family policies as a bundle tended to have a sharp surge in sales.

¹⁵ Based on the data collected from a questionnaire survey conducted in 1990 in the U.S.,

Kurosawa 2006¹⁶). These facts can be interpreted as that work-life balance programs produce a positive effect on business performance only in companies where employees are equally treated irrespective of gender in accordance with their productivity.

Up until now in Japan, companies have promoted to implement programs that aim to equalize male and female workers and to reduce gaps in treatment for employees irrespective of their career paths or job titles, and have applied work-life balance programs to all employees. As a result, positions where women can be entitled to as regular employees have been lost. If companies were, in the future, compelled to achieve equilibrium between part-timers and regular employees or to introduce part-timer-specific measures that are similar to current work-life balance programs designed for regular workers, the form of “employment” could shift into “outsourcing” or “independent contractors,” that is, the work form of “out of employment.”

One of the methods to further disseminate work-balance programs is to promote them as welfare policies. In such a case, since implementation of work-life balance programs brings about no advantage or even results in disadvantages for the part of enterprises, it would be required to create a certain framework in which the government or entire society bears the burden so that individual companies do not have to be responsible for it. More specifically, what are possible for this purpose include: to facilitate the use of day nurseries and babysitters, to encourage all employees including males to take child care leave and family care leave and to reduce overtime, and to help companies find substitute personnel for those on child care leave or family care leave. As mentioned earlier, when promoting work-life balance programs as one type of welfare policy, it should be carefully noted that there is a risk to widen the disparity between regular employees who can enjoy the benefit and part-timers or outsourced contractors who cannot.

Another alternative is to establish a positive cycle with which companies

Konrad and Mangel (2000) indicated that the cross item of the ratio of specialist employees, that of female employees, and WLI (composite Work-Life Index) had a positive effect on company performance (i.e. sales per head).

¹⁶ Abe and Kurosawa (2006) pointed out that short-time work systems had a negative effect on sales, that child care leave systems allowing more holidays than legal obligation had a positive effect on ordinary income, and that work-family balance systems had a significant impact on business performance in companies that put an importance on investment in vocational ability development for their employees.

can enhance their business performance; namely, a system in which enterprises can provide benefits for whomever they would like to do so as part of fringe benefits or employment management tools, or a strategy to recruit better personnel. To be more concrete, possible examples are to authorize companies to internally differentiate wages and treatments for their employees depending on job titles or individual vocational abilities under the single limitation of minimum standards designated by law, and to organize a system where companies that carry out work-life balance programs can be publicized and awarded. Although this may widen gaps in wage and treatment among regular employees within a same company, it could be considered desirable for the society as a whole, in a sense that it also takes into account differences between regular employment and irregular employment or out-of-employment contract.

This analysis is based on the data gathered during the period when Japan suffered a long-term economic recession and there was a very strong feeling of employment surplus among the public. Since 2002, the unemployment rate has declined, the job opening ratio has risen, and the employment requirement diffusion index has also been improving. For the last couple of years, the economic recovery and retirement of baby boomers expected to start in 2007 have intensified a sense of insufficiency in manpower; hence companies are now more vigorously engaged in programs to help their employees balance work and child care in the aim of securing human resources. According to Nihon Keizai Shimbun (2007), the number of companies who “believe that support programs for balancing work and child care would enhance employee motivation and lead to improved productivity” has sharply risen from 8.4% to 47.2% in comparison with two years before, while those who “do not necessarily believe so” have drastically decreased from 42.3% to 9.4%.¹⁷ If a similar analysis to mine is performed using a set of data collected in 2002 and onwards, there will be a high possibility that it produces different results. It is indispensable to have a viewpoint to observe economic trend and labor supply and demand in connection with companies’ human resources management programs.

If an increasing number of enterprises consider that support programs for balancing work and child care will result in productivity improvement, adoption

¹⁷ *The Work-Life Balance Survey* was conducted by Nihon Keizai Shimbun in April 2007 covering 2,242 major companies both listed and unlisted in the first section of the Tokyo Stock Exchange, out of which 392 companies responded (according to an article published on Nihon Keizai Shimbun, dated May 20, 2007).

and dissemination of such programs in companies that aim to grow profits will be naturally promoted, and the utilization of female personnel will also be further enhanced. From a policy-making standpoint, it will be desired to continue to have a system that publicizes and awards enterprises who are devoted to implementing support programs for balancing work and child care, such as certification of “child care supporting companies” based on “the Act for Measures to Support the Development of the Next Generation” or commendation to family-friendly companies, as well as to draw up new policies without being fettered by a provincial viewpoint of “internal equilibrium and equality.”

This paper was composed by adding extra remarks to and modifying the analysis performed for the survey report regarding gender equality compiled by the Ministry of Economy, Trade and Industry. I would like to express my gratitude to Professor Yasunobu Tomita of Doshisha University who led the survey for providing me with valuable advice. The views expressed herein are those of the author and not necessarily those of the Ministry of Economy, Trade and Industry.

Appendix

The index of “wage disparity within enterprises (wage variance)” used in the analysis for this paper was worked out as follows, after controlling, at the level of each enterprise, the variables of gender, number of years passed after graduation from university, educational background, and residing region, for approximately 50,000 enterprises:

First, the wage function was estimated using the data available in “the Basic Survey on Wage Structure” without differentiating by industry or by scale. The wage equation is the standard semi-logarithmic form.

$$\begin{aligned} \ln w = & \beta_0 + \beta_1 Dfem \\ & + \beta_2 ex + \beta_3 ex^2 + \beta_4 Dfem * ex + \beta_5 Dfem * ex^2 \\ & + \beta_6 SCH + \beta_7 RGN \\ & + Dpl_i * (\gamma_{0i} + \gamma_{1i} ten + \gamma_{2i} Dfem + \gamma_{3i} Dfem * ten) + u_i \end{aligned}$$

Note that *Dfem* indicates female dummy (reference group: male), *ex* is the

number of years passed after graduation from university (current age – age at graduation), ex^2 is the square of the number of years passed after graduation from university, $Dfem*ex$ is female dummy \times the number of years passed after graduation from university, $Dfem*ex^2$ is female dummy \times the square of the number of years passed after graduation from university, SCH is education background dummy (junior high school graduates, junior college/vocational school graduates, or university graduates; reference group: high school graduates), RGN is residing region dummy (Tokyo, Kanagawa, Osaka; reference group: others), Dpl_i is enterprise dummy where 1 is used for the number i enterprise and 0 for other enterprises, ten is the number of service years, $Dfem*ten$ is female dummy \times the number of service years, and u is error term.

w indicates wage, more precisely hourly pay rate obtained by dividing salary including bonus by actual working hours, calculated as follows: (fixed cash salary + bonus and end-term special allowance paid in the previous year/12)/(actual working hours within predetermined duration + actual working hours in excess of predetermined duration).

The wage disparity within enterprises used in this analysis can be calculated as below.

$$\begin{aligned}\text{Wage disparity within an enterprise} &= S.D.(u_i) \\ &= \text{standard deviation of error term}\end{aligned}$$

References

- Abe, Masahiro and Akiko Ouchi. 1998. Kigyo ha josei no honkaku katsuyo wo nozonde iruka?: Danjo koyo kikai kintoho to kosubetsu koyo kanri seido [Do companies desire to actively utilize female personnel?: The Equal Employment Opportunity Law and career path-specific employment management system]. Discussion Paper Series A, no.351, Institute of Economic Research Hitotsubashi University, Tokyo.
- Abe, Masahiro and Masako Kurosawa. 2006. Ryoritsu shien to kigyo gyoseki [Work-life balance support and company performance]. In Ryoritsu shien to kigyo gyoseki ni kansuru kenkyukai hokokusho [Report of the study group on work-life balance support and company performance]. Issued by NLI Research Institute, Tokyo.
- Arthur, Michelle M. 2003. Share price reactions to work-family initiatives: An institutional perspective. *Academy of Management Journal* 46, no.4:497-505.
- Arthur, Michelle M. and Alison Cook. 2004. Taking stock of work-family initiatives:

- How announcements of “family-friendly” human resource decisions affect shareholder value. *Industrial and Labor Relations Review* 57, no.4:599-613.
- Clifton, Thomas J. and Edward Shepard. 2004. Work and family programs and productivity-estimates applying a production function model. *International Journal of Manpower* 25, no.8:714-28.
- Kawaguchi, Akira. 2002. Famiri furendori shisaku to danjo kinto shisaku [Family-friendly policies and equal employment opportunity policies]. *The Japanese Journal of Labour Studies* 44, no.6:15-28.
- Kawaguchi, Akira and Akira Nagae. 2005. Kigyo hyosho ga kabuka, ninki rankingu ni ataeru eikyo [Effects of company awards on stock prices and popularity ranking]. *The Japanese Journal of Labour Studies* 47, no.5:43-58.
- Kodama, Naomi, Kazuhiko Odaki, and Yoko Takahashi. 2005. Josei koyo to kigyo gyoseki [Female employment and company performance]. *JCER Economic Journal*, no.52:1-18.
- Konrad, Alison M. and Robert Mangel. 2000. The impact of work-life programs on firm productivity. *Strategic Management Journal* 21:1225-37.
- Morita, Yoko. 2005. Ikuji kyugyoho no kiseiteki sokumen: Rodo juyo he no eikyo ni kansuru shiron [The restrictive aspect of the Child Care Leave Law: Tentative assumption on effects on labor demand]. *The Japanese Journal of Labour Studies* 40, no.2, 3:123-36.
- Morita, Yoko and Yoshihiro Kaneko. 1998. Ikuji kyugyo seido no fukyu to josei koyosha no kinzoku nensu [Dissemination of child care leave system and service length of female employees]. *The Japanese Journal of Labour Studies* 40, no.9:50-62.
- Ohtake, Fumio. 1999. Koyo seisaku ni keizaigakuteki hasso wo [Incorporating economic perspectives into employment policies]. *Monthly Labour Statistics and Research Bulletin* 601:1.
- Perry-Smith, Jill E. and Terry. C. Blum. 2000. Work-family human resource bundles and perceived organizational performance. *Academy of Management Journal* 43, no.6:1107-17.
- Roehling, Patricia V., Mark. V. Roehling, and Phyllis Moen. 2001. The relationship between work-life policies and practices and employee loyalty: A life course perspective. *Journal of Family and Economic Issues* 22, no.2:141-70.
- Ruhm, Christopher J. 1998. The economic consequences of parental leave mandates: Lessons from Europe. *Quarterly Journal of Economics* 113, no.1:285-317.
- Sakazume, Hiromi. 2002. Famiri furendori shisaku to soshiki no pafomansu [Family-friendly practices and organizational performance]. *The Japanese Journal*

- of Labour Studies* 44, no.6:29-42.
- Shigeno, Yukiko and Yasushi Okusa. 1998. Ikuji kyugyo seido no josei no kekkon to shugyo keizoku he no eikyo [Effects of child care leave system on women's marriage and continuation of work] *The Japanese Journal of Labour Studies* 40, no.9:39-49.
- Tomita, Yasunobu. 2002. Famifure seido no keizai bunseki [Economic analysis on the family-friendly system]. *The Journal of Social Policy and Labor Studies* 8:195-208.
- Wakisaka, Akira. 1999. Ikuji kyugyo riyo ni kansuru kigyo, jigyocho no chigai [Difference in the use of child care leave among corporations and enterprises]. *Okayama Economic Review* 30, no.4:185-211.
- . 2001. Shigoto to katei no ryoritsu shien seido no bunseki: Joshi Koyo Kanri Kihon Chosa wo Mochiite [Analysis of the support system for balancing work and family: Using the Basic Survey on Female Employment Management]. In *Economic analysis of employment policies*, ed. Takenori Inoki and Fumio Ohtake, 195-222. Tokyo: University of Tokyo Press.
- . 2002. Ikuji kyugyo seido ga shokuba de riyosareru tame no joken to kadai [Conditions and issues involved in utilizing child care leave in the workplace]. *The Japanese Journal of Labour Studies* 44, no.6:4-14.
- . 2006. Famiri furendori na kigyo, shokuba toha: Kinto ya kigyo gyoseki to no kankei [What is a family-friendly company and workplace?: Relation with equality and company performance]. *Japanese Journal of Research on Household Economics*, no.71.