The Shrinkage of Middle Classes in Japan?
The Growing Labour Market Flexibility and its
Consequences for the Class Structure

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Abstract

The decline of middle classes has received an increasing attention to sociologists. The changes in industrial structure and the rising forces of globalisation have made the labour market more flexible in adapting smoothly to fierce competition and a new environment. These socioeconomic transformations have been closely linked to the decline of middle classes in many countries. Nevertheless, it is important to account for the cross-national variations in the way in which changes in the class structure occurred over time. For instance, income inequality have grown significantly during the 1970s and 1980s in the US due largely to the growing polarisation of earnings distribution, whereas this did not occur in a similar manner in several industrialised countries with different institutional settings. This also led to the significant cross-national differences of how the middle class was formed before the advent of post-industrialisation and globalisation.

The study of the class structure in Japan can expand our theoretical insight in the recent transformation in class structure and its cross-national variation because Japan differ greatly from other European countries in terms of the institutional arrangements of labour market structures and welfare and employment policies.

Several studies suggested that during the 1960s and 1970s, many Japanese people believed that they were in the middle strata in the social stratification and they regarded the Japanese society as a classless society with lots of resources equally distributed. The myth of classless society became widespread during the period of the economic expansion in the 1960s. This resulted largely from the institutional arrangements of labour market and employment relations at this moment, such as the long-term employment practices and firm-based internal labour market. Employment relations were quite similar across workers despite their different occupational characteristics. It is highly desirable that employers would provide employees with the employment stability in spite of economic fluctuations, whereas employees should become flexible in terms of their jobs and the amount of work they are doing in response to the request from their organisations.

Recent socioeconomic transformations such as post-industrialisation and globalisation, however, have prevented Japanese organisations from maintaining their long-term

employment practices for all employees. Japanese organisations have also increasingly demanded numerical flexibility to adapt to rapidly changing external circumstances. Many organisations have introduced a substantial number of temporary workers who can be easily fired or laid-off to reduce the cost of personnel, whereas employment practices for regular workers remained intact. Several researchers suggested that this change generated a new type of inequality based on employment contract. This study investigates how the growing share of jobs with nonstandard work arrangements affects the class structure and the decline of middle classes in Japan, on the basis of the Weberian class approach. I use the data derived from the survey for social stratification and mobility (SSM), conducted in 1985, 1995 and 2005. I also focus on how the decline of middle classes differs between men and women because the long-term employment practices in Japan have implicitly assumed the gender inequality in employment.

The decline of middle classes has received an increasing attention to sociologists. The

changes in industrial structure and the rising forces of globalisation have been closely linked

to the decline of middle classes across many countries. After the 1970s, many advanced

countries have experienced a post-industrialisation: the decline of jobs in the manufacturing

industry and the growing number of jobs in the service sector. These two industries differ

markedly in terms of occupational structure (Esping-Andersen 1993; Wright and Dwyer

2003).

In the manufacturing industry, there are a large number of skilled jobs which are located

at the middle strata of the occupational hierarchy. Internal labour market was also working

well in the manufacturing industry. For this reason, even if young workers started to be

involved in unskilled jobs, they could improve their work-related skills because firms provide

workers with an opportunity to upgrade their skills. They could also climb up a corporate

ladder, and finally became managers or directors in the section or department of the company

(Althauser 1989). In contrast, in the service sector, the occupational structure tends to be

polarised into the two extremes: professional or managerial jobs and unskilled jobs. For

instance, highly skilled workers in the service economy include scientists, IT workers, experts

who deal with finance and commerce, administrators at headquarters of multinational corporations, and so forth. Those who occupy the lower positions in the occupational hierarchy include registers at grocery, babysitters, care workers and so forth (Moller and Rubin 2008). Conversely, jobs at the middle strata of occupational hierarchy, such as skilled workers in the factory, declined substantially. The polarisation of occupational structure divided so strongly between highly skilled and unskilled workers. In other words, the service economy lacks jobs which mediate between the top and the bottom in the occupational hierarchy. Once young workers are incorporated into the unskilled jobs in the service sector, they will lose their chance to improve their socioeconomic status in the labour market (Kalleberg 2011).

Globalisation may also be associated with the decline of middle classes across many countries. Globalisation requires organisations to become more flexible in the market. Under the forces of globalisation, firms have to increasingly compete each other across places. State governments de-regulate the economic activities for private organisations to help them make more profit, thereby increasing economic uncertainty in the world (Blossfeld et al. 2006). In order to adapt to the growing uncertainty and the fluctuating demand, firms have to become more flexible numerically (Kalleberg 2000; Kalleberg 2003). In other words, firms have to adjust the number of workers so quickly in response to economic demand. This situation makes firms increase the number of jobs with non-standard work arrangements. Several forms of employment relationship between employers and employees exist in the non-standard employment sector (Kalleberg 2000). For instance, part-time employment is a typical form of non-standard employment in the advanced country. In addition, employment with fixed term contract is one of the important form of non-standard employment. The

dispatched employment is also used by organisations as the mechanism which allows firms to adjust the number of workers so quickly. Self-employed workers or independent contractor are used as a kind of non-regular workers in some countries without any responsibilities which occur when directly employing workers (Hevenstone 2010).

How does globalisation affect the decline of middle classes?

The decline of middle classes might reflect the growing number of jobs in the non-standard employment sector. Until the 1980s, in many industrialised countries, employers had an incentive to protect employment of regular workers during the time of economic slowdown because investment towards employees would be lost if they dismiss skilled workers quite easily. In other words, organisations absorbed the economic risk and market uncertainty. In the era of globalisation, organisations face the market uncertainty more frequently than before. If employers can easily hire workers with skills necessary for employers outside the organisations, employers have a greater incentive to transfer the market uncertainty from employers to employees. Employers do not have to continue employing workers during the time of economic slowdown (Bochholz et al. 2009). Ulrich Beck suggested that many people confront themselves with the market risk and economic uncertainty. Even a member of the middle class cannot avoid being deeply embedded in the risk society (Beck 1992). Given his discussion, the class structure might lose its significance. Thus, globalisation and the growing uncertainty would generate the decline of middle classes.

However, Richard Breen is strongly opposed against the Beck's argument on the consequence of risk society on the class structure (Breen 1997). What occurred with

globalisation and the rising economic uncertainty is that the uncertainty has been transferred from the government and companies to individuals. As argued by Esping-Andersen, the 1960s saw the de-commodification of the market risk. Firms play a critical role in protecting workers' employment and providing welfare benefits, and the governments also established the welfare systems which enable the unemployed to maintain their living standard (Esping-Andersen 1999). During the era of postwar economic growth, the economic disparities by social class narrowed significantly through the mechanism of de-commodification. However, this trend has recently reversed under the forces of globalisation. Firms and the government have not afforded to maintain the welfare system which reduces the market risk and uncertainty. Breen suggested that the market risk has been transferred from the government and companies to individuals. Breen characterised this social change as the re-commodification of the market risk (Breen 1997). It implies that the ability of individuals to deal with the market risk depends largely on the economic resources held by each individual. Thus, the re-commodification of risk and uncertainty has widened the economic disparity between the rich and the poor in the ability to cope with risk and uncertainty.

Social class and employment relationship

As argued previously, globalisation increased the labour market flexibility. In the previous section, I suggested two hypotheses regarding the way in which globalisation shapes how the economic risk is distributed unequally among social classes. Uncertainty in the labour market is closely linked to employment relationship between employers and

employees. The class schema which was established by John Goldthorpe for cross-national comparison of intergenerational class mobility has a significant advantage in assessment of inequality of employment risk, because this class schema incorporates the employment relationship into its theoretical framework (Erikson and Goldthorpe 1992; Goldthorpe 2007).

Goldthorpe suggested two types of employment relationship such as service relationship and labour contract. Two types of employment relationship are generated by the following occupational conditions including specificity of assets (human capital) and difficulty of monitoring. If it is difficult for employers to monitor the labour process, employees would have greater autonomy in the workplace. In this case, employers need to provide employees with benefits and higher than market wage to ensure that autonomous employees would voluntarily obey employers. In addition, when employees have to acquire firm-specific skills to engage in jobs in the workplace, employers need to protect the worker's employment even during the period of economic slowdown because they invested a lot to provide employees with an opportunity to improve skills. Another reason for this is that it is very difficult for employers to obtain workers with firm-specific skills outside organisations. Thus, service relationship refers to the situation in which autonomous employees with firm-specific skills make a voluntary contribution to employees or organisations in return for compensations such as welfare benefits, higher than market wage, and seniority earnings (Goldthorpe 2007).

In contrast, employment relationship regulated by labour contract entails a relatively short-term and specific exchange of money for effort. Presumably, a lack of difficulty of monitoring and specificity of assets leads to labour contract. When employers or his or her agents can easily monitor the labour process, employers can also calculate wages on the basis of effort or time made by employees. In addition, employers do not have to provide these

employees with welfare benefits and seniority earnings to ensure that employees are willing to stay at the same firm for longer years, because such employees can be hired easily outside organisations. The situation of labour contract seems quite similar to that of contingent workers (Erikson and Goldthorpe 1992).

Goldthorpe also considered the way in which employment relationship depends on occupational status. Figure 1 presents the way in which social class is intersected with employment relationship. In this figure, two dimensions of occupational conditions as argued previously are used to distinguish the association between social class and employment relationship. This figure employs the Erikson-Goldthorpe-Portocarrero (EGP) class schema to identify the class positions among individuals. Class I and II mainly refer to professionals and managers in the organisational bureaucracies. Class I represents higher grade professionals and managers, while Class II indicates lower grade ones. Class III who are routine non-manual employees are divided into IIIa and IIIb. Class IIIa is defined as routine non-manual occupations in administration and commerce such as clerical workers, secretariats and so forth. Class IIIb refers to routine non-manual occupations in sales and service. The subdivision of Class III into two class positions is conducted because Class IIIb does not differ significantly from Class VIIa which represents unskilled manual workers in terms of occupational conditions and employment contract. Class V denotes supervisors of manual workers and lower-grade technicians. Class VI and VII refers to skilled and unskilled manual workers, respectively. Class VII is also divided into Class VIIa and VIIb, indicating that VIIa represents unskilled workers in the non-agricultural sector and VIIb stands for unskilled workers in the agricultural sector. Although the EGP class schema takes into account the self-employment sector as a distinctive class position, this figure does not

consider these class positions because this figure focuses on the relationship between employers and employees (Erikson and Goldthorpe 1992; Goldthorpe 2007).

According to Goldthorpe, professionals and managers are likely to have service relationship with employers because of higher level of specificity of assets combined with higher level of difficulty of monitoring, whereas skilled and unskilled workers are likely to have employment relationship regulated by labour contract. The EGP class schema demonstrates that we can identify employment relationship according to occupational status.

The context of inequality in Japan

The theoretical framework of Goldthorpe's social class posits that the class structure has been established uniformly across industrialised countries. To ensure the cross-national comparison of intergenerational class mobility, it is important for researchers to assume that the class structure exists uniformly across nations.

Nevertheless, we need to address the question concerning whether the association between social class and employment relationship as specified by Goldthorpe can be applied to other industrialised countries. This study looks at the case of Japan because Japan might greatly differ from the UK with respect to the way in which employment relationship depends on the social class. By exploring the recent situations of social class and employment relationship deeply embedded in the different institutional setting like that of Japan, we might be able to extend our theoretical insight on the decline of middle classes and its institutional variation. This study highlights the role of institutions in shaping the changing class structure and middle classes by observing the Japanese case.

With respects to the context of inequality and class structure in Japan, it is important to discuss the ways in which the postwar economic growth during the period from 1950s to 1970s shaped the institutional arrangements of labour market and class structure (Estévez-Abe 2008; Koike 1988). During this time, many Japanese people believe that Japan is a highly egalitarian society. This view indicates that most of Japanese people belong to the middle classes, regardless of different educational attainment and occupational positions (Kikkawa 2000). In addition, Japanese people believed that the postwar economic growth in Japan enabled them to enhance their living conditions. In fact, industrialisation fostered the class mobility across generations. The previous studies showed that during the period of rapid economic expansion, people whose fathers were peasants or agricultural workers in rural areas moved to urban areas to engage in unskilled jobs in manufacturing industry (Ishida 2001). People experienced a significant increase in their earnings and in their purchasing power, and could buy many goods and services that had not been enjoyed by their parents living in rural areas (Hara and Seiyama 2005). These massive economic changes led people to neglect the issues of economic inequality and social class.

Furthermore, the employment relationship which was established and became pervasive in the 1960s also facilitated many people to view Japanese society as highly egalitarian. Regardless of occupational status, many people were employed as regular workers who were provided with long-terrn employment, seniority earnings and welfare benefits by companies (Koike 1988). Employers do so because employers are in charge with protecting worker's livelihood. Such an employment relationship fosters the formation of firm-based internal labour market in Japan (Takenoshita 2008). According to Goldthorpe, service relationship can be found among professional and managerial workers. Conversely, in Japan, regular workers

could have long-term employment, seniority earnings and welfare benefits provided by employers, regardless of their occupational status. As Koike indicated, the difference in employment relationship between the UK and Japan lies in the fact that a kind of service relationship has been applied to skilled and unskilled manual workers in Japan, whereas this was not found among manual workers in the UK (Koike 1996). Imai characterised the employment relationship that can be seen among regular workers in Japan as 'company citizenship' (Sato and Imai 2011). Rather than the government, companies played a significant role in protecting the social rights for individuals and equalising Japanese society. Institutional arrangements of the Japanese labour market have thus made the employment relationship highly distinctive from that of the UK. Given that service relationship is used to identify the middle classes across nations, skilled and unskilled workers in Japan were included into middle classes.

The recent economic change and class structure in Japan

Higher level of employment protection for regular workers has strategic advantages for employers because it enables the organisations to accumulate firm-specific skills and technologies. However, organisations which maintain lifetime employment have significant disadvantages in numerical flexibility, defined as the ease in which organisations can adjust the number of workers in response to changing external circumstances (Kalleberg 2001). If organisations maintain the lifetime employment, they are less flexible in declining the number of workers during the economic recession.

Globalisation has also required Japanese organisations to be more numerically flexible

in reducing the cost of personnel, thereby becoming competitive with other organisations in different countries. However, the higher employment protection for regular workers has prevented Japanese firms from becoming more numerically flexible. How have Japanese companies coped with the forces of globalisation?

Whereas many Japanese firms maintained the long-term employment practice and seniority earnings for regular workers, they gradually decreased the number of regular workers and increased workers with non-standard work arrangements, such as part-time workers, workers with fixed-term contract and temporary dispatched workers. Regular workers are employed as core workers who are involved in jobs that require firm-specific skills and longer tenures. Conversely, non-regular workers tend to engage in unskilled jobs or easy tasks. In other words, non-regular workers would have no chances to improve their skills through being employed as non-regular workers (Genda 2005). Thus, bad job characteristics tend to be concentrated into the non-standard employment sector in Japan. This situation generated the barrier to mobility from non-standard employment sector to the standard employment sector (Takenoshita 2008).

Gender, class and uncertainty in Japan

When it comes to the growth of labour market flexibility and an increase in workers with non-standard work arrangements, we need to take into account the gender inequality in the workplace. Whereas the current personnel management system was established and became prevalent in Japan during the 1960s, the long-term employment practices have been applied to male workers. Female workers have been marginalised in the workplace because of the

gender-based allocation of family responsibilities (Brinton 2001). Japanese employers expected regular workers to do overtime work when companies have to produce more goods or services than usual (Yu 2001). Given the gender division of labour in Japan, female workers with young children, however, cannot do overtime work frequently. In addition, employers predict that women are more likely to quit a job when they have young children than men. On the basis of this prediction, discrimination against female workers in the workplace is likely to occur in terms of hiring decisions, provision of training, allocation of work and promotions (Brinton 1993; Yu 2009). For this reason, many married women with young children have been employed as non-regular workers such as part-time workers and contingent workers.

Therefore, the association between social class and employment relationship may differ greatly between men and women in Japan, and we may find significant gender variations in how social class is intersected with employment relationship. The recent growth of non-standard employment in Japan has created the rising gender inequality because the number of non-regular workers in Japan increased more among women than men.

Given these discussions, this paper addresses the following question. How is class position associated with employment relationship and what changes occur with respect to this association? In this paper, employment relationship is dichotomised: standard and non-standard employment. This paper assumes that the non-standard employment consists of part-time employment, fixed-term employment and dispatched employment.

Data, method and variables

This study uses the data derived from the surveys of social stratification and mobility (SSM). The SSM surveys have been conducted every ten years since 1955. In this study, I use the SSM survey data from 1985 to 2005 because the SSM surveys conducted from 1955 to 1975 did not focus on women. By using the SSM surveys from 1985 to 2005, I can compare the association between social class and employment relationship between men and women over time.

This study uses the log-linear models with design matrices to investigate the patterns of association between social class and employment relationship. The log-linear models have significant advantages in testing different hypotheses regarding the patterns of the association in greater details.

Variables used in this study include social class, employment relationship, gender and time. This study employs the EGP class schema to identify the class positions among individuals. In this paper, I exclude self-employed workers and employers who manage small-sized firms from the data set so that we can focus more on situations of employees in Japan.

Descriptive statistics

Figure 2 and 3 represent the share of non-standard employment by social class from 1985 to 2005, separately for men and women. When it comes to the descriptive results concerning social class and employment relations among male employees, almost all of professionals and managers (Class I & II) are workers with standard work arrangements in 1985. This is also the case with unskilled workers in Japan. It is shown that only six per cent

of unskilled workers are workers with non-standard work arrangements in 1985. Thus, the employment relationship which can be seen among Japanese skilled and unskilled workers in the 1980s is extremely different from the theoretical assumption of Goldthorpe's class structure.

Conversely, we can see the growing share of non-standard employment over time, according to Figure 1. The share of non-regular workers among clerical workers (Class IIIa) and skilled manual workers (Class VI) exceeded 20 per cent. It also reached almost 30 per cent among unskilled workers. There is also a modest increase in the share of non-regular workers among professionals and managers. The proportion of non-regular workers increased from one per cent in 1995 to four per cent in 2005.

Although the proportion of non-standard employment increased across class positions, a vast majority of male employees were workers with standard work arrangements in 2005. For instance, even among unskilled workers who experienced a largest rise in the share of non-regular workers, more than 70 per cent were regular workers with standard work arrangements in 2005. Approximately 80 per cent of skilled workers were regular workers in 2005, too.

Figure 3 indicates the share of non-standard employment divided by social class among female workers. Obviously, women are more likely than men to be involved in non-standard employment regardless of time and social class. In 1985, 20 per cent of lower grade professionals and managers (Class II) are non-regular workers, whereas more than 40 per cent of skilled and unskilled manual workers are non-regular workers. The results of non-standard employment in 1985 show the large variation between men and women.

Comparing the share of non-standard employment over time, the results indicate that the

level of growth of the non-standard employment differ greatly among social class. We see a massive increase of non-standard employment among unskilled workers (Class VII) and non-manual workers in sales and service (Class IIIb). Among the routine non-manual workers in sales and service, the share of non-standard employment increased from 40 per cent to 72 per cent. Among unskilled manual workers, it rose from 43 per cent to 80 per cent. It seems that the result of female employees in Japan has been converging into the pattern of association between social class and employment relationship as assumed by Goldthorpe's class analysis.

The results of log-linear modelling

This study employs the log-linear model to estimate the patterns of association between social class and employment relationship (Erikson and Goldthorpe 1992; Yamaguchi 1983). I constructed several models to compare the patterns of association between men and women and over time. First, I introduced the model to test gender differences of patterns of the association between social class and employment relationship. This model is written as:

$$\log F_{fijk} = \lambda + \lambda_f^G + \lambda_i^T + \lambda_j^C + \lambda_k^E + \lambda_{fi}^{GT} + \lambda_{fj}^{GC} + \lambda_{fk}^{GE} + \lambda_{ij}^{TC} + \lambda_{ik}^{TE} + \lambda_{jk}^{CE} + \lambda_{fij}^{GTC} + \lambda_{fjk}^{GCE} + \lambda_{ijk}^{TCE} \ (1)$$

where F_{fijk} is the expected frequency in cell fijk of a four-way table comparing gender (G), time (T), social class (C) and employment relationship (E). λ is a scale factor, $\lambda_f^G, \lambda_i^T, \lambda_j^C, \lambda_k^E$ represent the main effects of the distribution of individuals over gender, time points, social class and non-standard employment, respectively. The remaining terms represent the effects for two-way or three-way associations in mobility tables.

Second, I test the Goldthorpe model in the context of Japanese employment relationship

separately for men and women. In this equation, I omit the gender from the model. I use the three-way mobility table. The model can be written as:

$$\log F_{ijk} = \lambda + \lambda_i^T + \lambda_j^C + \lambda_k^E + \lambda_{ij}^{TC} + \lambda_{ik}^{TE} + \lambda_{a(j,k)}^{MX} + \lambda_{b(j,k)}^{LC} \quad (2)$$

where two $\lambda_{a(j,k)}$ terms refers to the particular interaction level to which the jkth cell is allocated within the levels matrix for two-way interaction term about social class and employment relationship. Goldthorpe suggested that class positions are distinguished into three groups in terms of employment relationship, such as service relationship, labour contract and mixed forms. Given this assumption, it is expected that routine non-manual class in sales and service (Class IIIb), skilled manual class (Class VI) and unskilled manual class (Class VII) would be quite similar in terms of the likelihood of being in non-standard employment sector. This is also the case with the routine non-manual class in administration and commerce (Class IIIa) and supervisors of manual workers and lower grade technicians (Class V). On the basis of this discussion, the association between social class and employment relationship was decomposed into two parts such as $\lambda_{a(j,k)}^{MX}$ and $\lambda_{b(j,k)}^{LC}$. The effect of mixed form is denoted by $\lambda_{a(j,k)}^{MX}$, and the effect of labour contract is denoted by $\lambda_{b(j,k)}^{LC}$ (see design matrices in Table 1). The likelihood of being in non-standard employment among professionals and managers (Class I and II) was not estimated in this model because these class positions were used as a reference category.

Table 2 represents the result of log-linear analyses examining gender differences in the association between social class and employment relationship. I employed four models to compare the effects of gender and time on the association between social class and employment relationship. Differences among the four models lie in the number of three-way interaction terms used in these models. The first model used the term of three-way interaction

such as gender, time and social class. In the second model, the term of three-way interaction of gender, social class and employment relationship is added to the first model. In the third model, the interaction term regarding time, social class and employment relationship is added to the first model. Comparing across these three models, the effect of gender on the association between social class and employment relationship is substantially larger than the effect of time in terms of *BIC* statistics and the log-likelihood chi-square statistics.

I conducted the log-linear model by using a three-way cross table, separately for men and women. Table 3 represents the result for men. The first model assumes that there would be no association between social class and employment relationship. This model is rejected by the test of chi-square statistics. The second model assumes that there would be a significant association between social class and employment relationship whereas there would be no temporal change in this pattern. The hypothesis is supported by the data in terms of the chi-square statistics. The third model applies the design matrices as assumed by the Goldthorpe model. However, the deviance between the model and the data was increased. Therefore, the Goldthorpe model was rejected.

In the fourth model, I revised the design matrices to be fitted to the data. This model is best fitted to the data. In this model, I revised two points. First, Class V has advantage over Class IIIa with respect to the access to the service relationship, whereas Class IIIa is quite similar to the result of classes characterised as labour contract. Second, unskilled manual workers (Class VII) have significant disadvantage in terms of the likelihood of being in non-standard employment. Therefore, I divided the term of labour contract into two components, such as LC1 and LC2. This model is written as:

$$\log F_{ijk} = \lambda + \lambda_i^T + \lambda_j^C + \lambda_k^E + \lambda_{ij}^{TC} + \lambda_{ik}^{TE} + \lambda_{a(j,k)}^{MX1m} + \lambda_{b(j,k)}^{LC1m} + \lambda_{c(j,k)}^{LC2m} (3) \quad .$$

Design matrices of the three effects such as MX1m, LC1m, and LC2m can be found in Table 4. Parameters estimated under the fourth model are shown as: MX1m=0.857**, LC1m=1.741**, and LC2m=2.351**. * denotes 5 per cent level of significance and ** 1 per cent level of significance. These parameters represent the logged odds of being in non-standard employment relative to professionals and managers. When calculating these odds, it is found that supervisors of manual workers are approximately twice more likely to be in non-standard employment than professionals and managers. On the basis of parameters of LC1m, non-manual workers and skilled workers are five times as likely to be non-regular workers as professionals and managers. LC2m shows that unskilled workers are more than ten times more likely to be in non-standard employment. The result suggested that the pattern of the association between class and employment was not changed significantly over time, whereas we found that the overall distribution of employment relationship was changed significantly between 1985 and 2005. It is demonstrated that regardless of social class, non-standard employment expanded considerably over time.

Table 5 presents the result of log-linear analyses exploring temporal changes in the pattern of association between class and employment among female employees. The result suggested that the hypothesis of no temporal change in the association between class and employment was not supported by empirical evidence as was seen in the second model. Before examining the temporal change in this association, I compared between the Goldthorpe model and the revised model the extent to which the pattern of association between class and employment was fitted to the data. It was shown that the revised model was more preferable to the Goldthorpe model. I also examined what kind of changes occurred with respect to the association between social class and employment relationship. The sixth

model was the most preferable of all the models specified in terms of *BIC* statistics.

The equation 4 indicates the sixth model in the log-linear analysis:

$$\log F_{ijk} = \lambda + \lambda_i^T + \lambda_j^C + \lambda_k^N + \lambda_{ij}^{TC} + \lambda_{ik}^{TN} + \lambda_{a(i,j)}^{MX} + \lambda_{b(i,j)}^{LC1f} + \lambda_{c(i,j,k)}^{T(LC2f)} \quad (4)$$.

In this equation, MX was not changed in terms of design matrices, whereas the term of LC was divided into two components such as LC1f and LC2f. These two terms assume that unskilled workers differ significantly from non-manual workers in sales and service and skilled workers in terms of the likelihood of being in non-standard employment. In addition, two terms of LC2f were estimated, such as LC2f in 1985 and 1995 and LC2f in 2005. This model assumes that the change over time occurred among unskilled workers. The design matrices in this model can be found in Table 6.

The result suggested the growing class disparity in the likelihood of becoming non-regular workers between professionals and managers and unskilled workers among women, whereas the overall increase in the share of non-standard employment also occurred between 1985 and 2005, regardless of social class.

Discussion and conclusion

This paper investigates the patterns of association between social class and employment relationship in Japan, and explores how this pattern differs between men and women and what kind of changes in this pattern occurs over time. With respect to temporal changes in the class structure, the results of men showed no changes over time in the association between class and employment relationship, whereas we see the significant growth in the overall distribution of non-standard employment among men. In contrast, the results of women

highlighted the significant changes in the association between social class and employment relationship, and indicated that there was a growing class disparity in employment relationship, while overall growth in non-standard employment also takes place among women.

Empirical findings represent that Japanese women have been converging to the patterns of association between class and employment relationship as predicted by John Goldthorpe, whereas Japanese men remained inconsistent with the class structure assumed by the Goldthorpe's class theory. In particular, the results of descriptive statistics demonstrated the gender difference in changes in the class structure in Japan. Certainly, there has been an overall increase in non-standard employment among male employees in Japan. However, even among unskilled workers who experienced the largest growth in non-standard employment, more than 70 per cent remained in the standard employment sector in 2005. In contrast, in 1985, the proportion of non-regular workers among female unskilled workers was higher than their male counterparts. In 2005, approximately 80 per cent of female unskilled workers were workers with non-standard work arrangements.

These empirical results seem to reflect institutional arrangements of labour market in Japan because the Japanese labour market practices such as long-term employment, seniority earnings and firm internal labour market has been consistently applied to male regular workers than female workers. Female workers have persisted to be marginalised in the Japanese labour market because of the gender-based allocation of family responsibilities. Results suggested that female workers have been rendered vulnerable to the forces of globalisation and the growing flexibility in the labour market, whereas the employment protection for male regular workers has remained relatively stable.

Nevertheless, we should cautiously interpret the growing gender inequality in employment relationship because some married women have also been protected through economic dependence on their husbands under the male breadwinner model. In other words, given the gender division of labour, some married women with young children are willing to choose to be employed as part-time workers or contingent workers because the flexible working time schedule in non-standard employment allows women to accommodate competing demands of work and family. However, there is also growing instability in family, and family dissolution has increased over time in Japan. In many cases, after marital dissolution, mothers take custody of their children. Meanwhile, it does not necessarily mean that mothers have the ability to earn enough money to bring up their children. Poverty rates among single-parenting families are extremely higher in Japan than other advanced countries. It has been reported that more than half of children brought up by lone mothers have been below the threshold of relative poverty (Abe 2008). The poverty in single mother's households has resulted largely from the gender discrimination in a workplace. In Japan, many women with younger children faced obstacles in getting a job with standard work arrangements. Consequently, a large number of lone mothers engaged in part-time employment or other forms of non-standard employment. Given the rising number of family dissolution, it is increasingly difficult for Japanese women to take the gender-based allocation of family responsibilities for granted. Thus, because of the globalisation and the increasing number of non-standard employment, women have become more disadvantaged in the labour market and have become increasingly more vulnerable to the market risks and poverty. Conversely, male workers have been relatively protected by the institutional arrangements of labour market practices.

Did the globalisation and growing labour market flexibility generate the decline of middle classes in Japan? If we include unskilled workers into middle classes, it is possible to say that middle classes have declined in Japan over time. According to the Goldthorpe's discussion on social class and employment relationship, we can also define unskilled workers as one of middle classes because until the 1980s, employers provided even unskilled workers with a kind of service relationship such as welfare benefits and seniority earnings provided by firms. The share of non-standard employment among male unskilled workers increased only modestly relative to among female unskilled workers from the 1980s to the 2000s. However, if we define the middle class as consisting of professionals and managers who have had significant advantage over holding important resources, their advantage in terms of employment relationship with employers were obviously maintained in Japan. Institutional arrangements of labour market in Japan enable middle classes such as professionals and managers to maintain the service relationship with employers. On the basis of the empirical findings in Japan, institutional arrangements hindered middle classes from declining. This is especially the case with male workers, as argued above. By looking at the case of Japan, we thus highlighted the fact that the decline of middle classes depend markedly on institutional arrangements of labour market.

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Figure 1. Social class and employment relationship

Specificity of assets

High

I & II
（Professional and Managers）

V
（Supervisors of manual workers）

Service relationship

Low

High

Difficulty of monitoring
Labour contract
IIIb（Sales）VI（Skilled）
VIIa（Unskilled)
VIIb（Unskilled
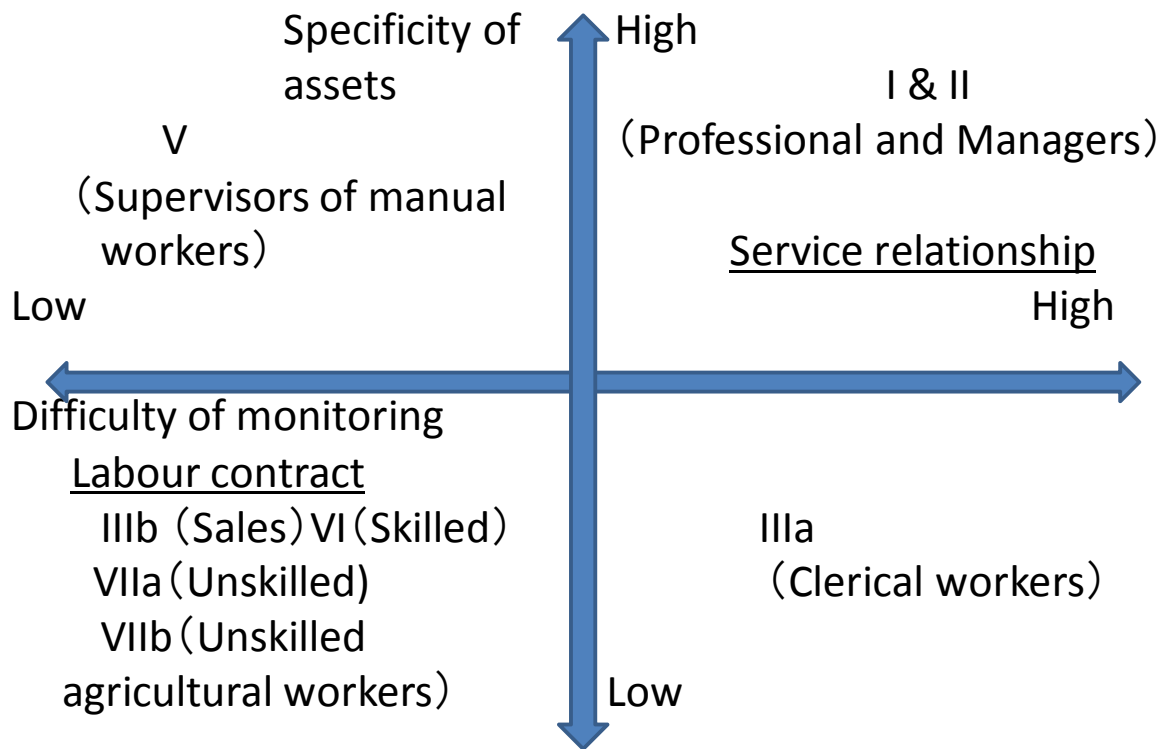agricultural workers）

IIIa
（Clerical workers）

Low

Figure 2. the share of non-standard employment by social class among male workers
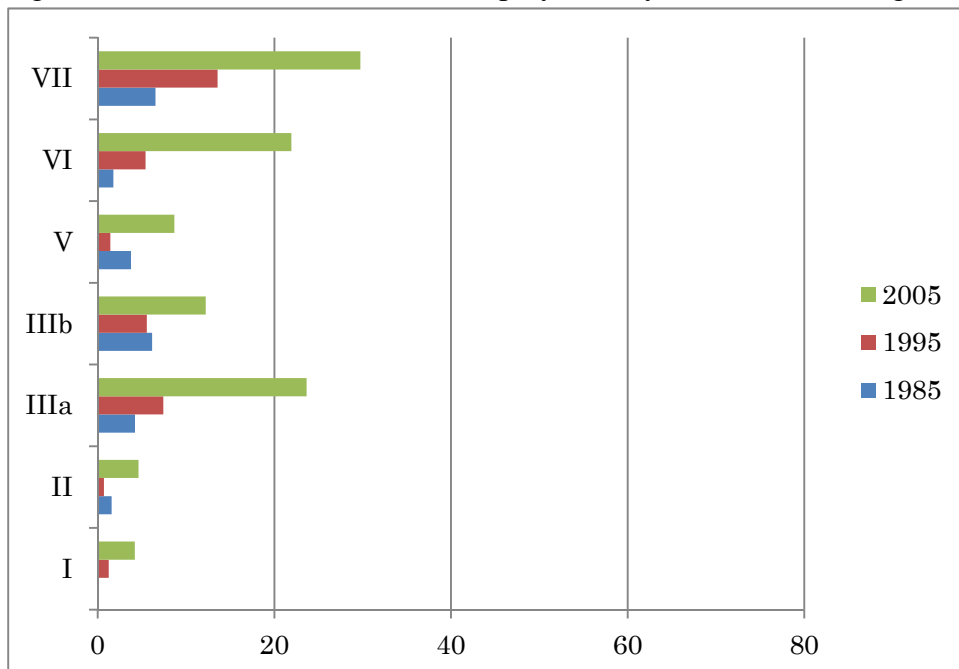
Figure 3. the share of non-standard employment by social class among female workers
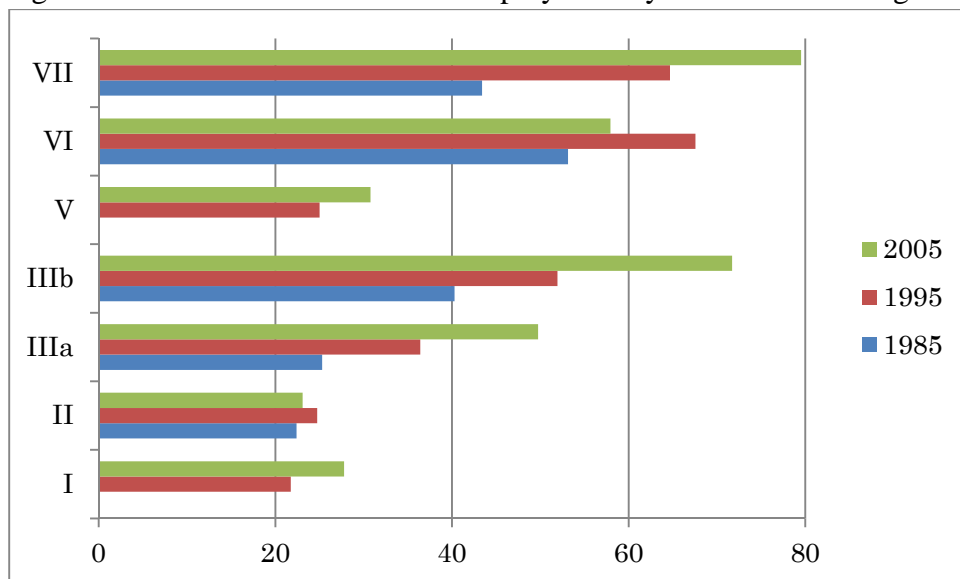

Table 1. Design matrices of the effects of association between social class and employment relationship

		MX(a(j,k))		LC(b(j,k))	
		Employment		Employment	
		S	N	S	N
Class	I+II	0	0	0	0
	IIIa	0	1	0	0
	IIIb	0	0	0	1
	V	0	1	0	0
	VI	0	0	0	1
	VII	0	0	0	1

S denotes the standard employment.

N denotes the non-standard employment.

Table 2. Log-linear analyses examining gender differences in the association between social class and employment relationship

Model	L2	P	df	BIC	Dissimilarity index
GTC	4944.4	0	36	4621	31.94
GTC, GCE	337.7	0	24	122	6.00
GTC, TCE	1338.9	0	18	1177	14.33
GTC, GCE, TCE	61.6	0	12	-46	2.07

Table 3. Log-linear analyses examining temporal changes in the pattern of association between social class and employment relationship among men

	Model	L2	df	P	BIC	D. I.
1	Conditional independence(TC, TN)	254.3	15	0	127	5.51
2	No change in class structure (TC, TN, CN)	13.2	10	0.21	-71	0.86
3	Goldthorpe model	56.9	13	0	-53	2.33
4	Revised model	16.8	12	0.16	-85	1.06
	Selective contrast					
	Model 2 vs Model 1	241.1	5	0.00		
	Model 3 vs Model 2	43.7	3	0.00		
	Model 4 vs Model 2	3.5	2	0.17		

Table 4. Revised design matrices of the effects of association between social class and employment relationship among men

		MX1m(a(j,k)) Employment		LC1m(b(j,k)) Employment		LC2m(c(j,k)) Employment	
		S	N	S	N	S	N
Class	I+II	0	0	0	0	0	0
	IIIa	0	0	0	1	0	0
	IIIb	0	0	0	1	0	0
	V	0	1	0	0	0	0
	VI	0	0	0	1	0	0
	VII	0	0	0	0	0	1

Table 5. Log-linear analyses examining temporal changes in the pattern of association between social class and employment relationship among women

	Model	L2	df	P	BIC	D. I.
1	Conditional independence(TC, TN)	448.0	15	0	327	15.87
2	No change in class structure (TC, TN, TC)	36.1	10	0.0	-45	3.9
3	Goldthorpe model	49.3	13	0	-56	4.33
4	Revised model	38.3	12	0.0001	-59	4.06
5	Temporal change model 1	16.5	6	0.0111	-32	1.66
6	Temporal change model 2	27.6	11	0.0037	-61	3.49
	Selective contrast					
	Model 2 vs Model 1	411.9	5	0.000		
	Model 3 vs Model 2	13.2	3	0.004		
	Model 4 vs Model 2	2.2	2	0.335		
	Model 5 vs Model 4	21.8	6	0.001		
	Model 6 vs Model 4	10.7	1	0.001		

Table 6. Revised design matrices of the effects of association between social class and employment relationship among women

		MX1(a(j,k)) Employment		LC1f(b(j,k)) Employment		LC2f(c(j,k)) Employment	
		S	N	S	N	S	N
Class	I+II	0	0	0	0	0	0
	IIIa	0	1	0	0	0	0
	IIIb	0	0	0	1	0	0
	V	0	1	0	0	0	0
	VI	0	0	0	1	0	0
	VII	0	0	0	0	0	1