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UNION EFFECT ON THE USE OF NON-REGULAR LABOR IN THE REPUBLIC OF KOREA

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Our paper aims at analyzing the union effect on the externalization of employment relations, focusing on how labor unions affect management's strategic use of non-regular labor within the Korean context of industrial relations. Our study presents several interesting implications. Firstly, the unions' motivator role for managerial use of non-regular labor is more evident than its constrainer role. Secondly, union power exerts a "U-type" impact on the use of indirect non-regular labor, while affecting directly employed non-regular labor in a positive linear way. Thirdly, labor unions in large establishments are more active and influential in representing their members' interests than their counterparts in small establishments with limited financial resources. In particular, the interactive function of the union's power and union leaders' attitudinal inclinations is found to be significant in the negative direction among large establishments.

Keywords: non-regular labor, management's strategic use, union power, union leaders' attitudinal inclinations
JEL classification: J5

I. INTRODUCTION

For the past decade, market forces have been increasingly instrumental in the determination of employment relations patterns in every industrialized economy. Within the context of growing global competition, de-industrialization, and rapid technological innovation, firms have attempted to reshape the existing employment relations in the market-driven direction. Management has adopted a variety of strategic measures to "unbundle" corporate structure and externalize employment relations by resorting to outsourcing, spin-offs, and the increasing use of non-regular labor (Cappelli 1999). In particular, employers expand the use of non-regular labor, such as temporary employees, part-timers, temporary help agency or contract labor, on-call labor, and independent contractors, in order to achieve cost containment and flexible labor utilization, and sometimes avoid the organizational coverage of the existing unions (Kalleberg 2003). Similarly in Ko-

rea, the externalization of employment relations has occurred in a drastic way, particularly since the outbreak of the economic crisis at the end of 1997. The share of non-regular workers in the total labor force of the country increased from 43.4 percent in 1996 to 51.6 percent in 2002 (KLI 2003).

There has been rapid growth in the non-regular labor force, which represents the core of the externalizing trend in employment relations, and in the research literature related to this precarious workforce. Major foci of the existing research literature include the theoretical concept of non-regular labor, its magnitude and working conditions, background factors influencing the growth of this atypical labor force, and social policies to protect workers. Limited attention has been paid to the impact labor unions exert on management's use of non-regular workers. Some literature that attempts to examine the causality of the growth in non-regular labor takes into account a union effect, yet only as one of various independent variables.

Our paper aims at presenting an in-depth analysis of the union effect on the externalization of employment relations, particularly focusing on how labor unions affect management's strategic use of non-regular labor. Hypothetically, labor unions play a dual role in influencing the managerial use of non-regular labor. On the one hand, unions can be assumed to promote the proliferation of non-regular labor. They encourage employers' strategic preference for using a non-regular workforce by imposing rigid work regulations and practices on regular workers. At the same time they accommodate management's desire to promote numerical flexibility by demanding that there be a marginal labor force to buffer members' employment security and provide relief when workloads become burdensome. On the other hand, unions are concerned about the fact that regular workers' jobs could be substituted and their organizational base might be eroded as a result of the increasing presence of non-regular labor. Because of these concerns, unions may operate as a constraint on management's strategic move toward an increasing reliance upon nontraditional forms of employment. Given this dual impact on managerial strategy for using non-regular labor, we need to analyze the effects in considering more detailed aspects such as union power, attitudinal inclination, and other intrinsic attributes. This way, it will be possible to understand the direction of the impact of unions on employers' use of non-regular labor.

In this paper, the focus is placed on examining what impact union attributes exert on employers' hiring of non-regular labor, by using the KLI (Korean Labor Institute) Workplace Panel Survey Data. The empirical analysis of our paper is comprised of three parts. In the first part, the union effect on the intensity and growth of managerial use of non-regular labor is explored by analyzing the total sample, including both unionized and nonunion establishments. In the second part, we determine which of the attributes of labor unions, subcategorized as organizational power, attitudinal orientation, and feature of union leadership, exerts a significant influence on the intensity of managerial use of non-regular labor under the system of

unionized establishments, and in what way. In the third component of the analysis, we determine whether union effect on non-regular employment tends to converge or diverge between large and small establishments, and what different causal relationships exist in particular.[1]

Prior to conducting the empirical analysis, related literature is reviewed and our analytical model is presented. In conclusion, we address some research implications, based upon the results of our empirical analysis.

II. LITERATURE REVIEW AND ANALYTICAL MODEL

The internal labor market (ILM) theory can be used as an illustration to explain the rationale for the internalization of employment relations at the firm level. Some ILM literature indicates that the labor union, and its role of collective channel for organized workers, is a key factor influencing the formation and development of ILMs. The ILM determines the pricing and allocation of workers inside individual firms and insulates them from external labor markets (Kerr 1954; Doeringer and Piore 1971; Osterman 1984; Jacoby 1985).

In contrast to this ILM literature, in recent studies, in which attempts are made to explain the proliferation of non-regular employment, the union effect has been treated as one of the determinants shaping employers' pursuit of "de-ILM" or the externalization of employment relations (Lautsch 2002; Uzzi and Barness 1998; Ahn, Kim, and Lee 2003; Kim and Kim 2002). In this regard, some authors relate the weakening power of labor unions to employers' increasing use of "external" non-regular labor (Baron, Dobbin, and Jennings 1986; Baron and Jennings 1988; Osterman 1994a).[2] Other contributions analyze the effect of labor unions and labor relations on firms' utilization of atypical labor. In particular, these studies include union-related variables (i.e., the existence of labor union, the level of unionization, and the labor-management relations climate) as key causal factors explaining dependent variables, such as the incidence, intensity, growth, and employment patterns in employers' use of non-regular labor.

However, the findings of the existing studies have been shown to be inconsistent, and the results of empirical analysis conflicting. For instance, Abraham (1988) dem-

[1] Labor markets in Korea are sharply segmented between large and small firms in many aspects. According to the conceptual typology proposed by Doeringer and Piore (1971), large firms in the country are characterized as the primary sector, while small firms represent the peripheral or secondary sector. In fact, employees in large firms enjoy more secure jobs, higher wages, larger fringe benefits, and stronger union protection than those in small firms (Jung 2002, 1991). Given the segmented labor market in Korea, we try to identify the difference in the effect of labor unions on the use of non-regular labor between large and small firms, by classifying our sample of unionized establishments by firm size and comparing the two subgroups in the regression analysis.

[2] By contrast, Hunter et al. (1993) argue in their case study that employers' use of non-regular labor is unrelated to the weakening power of labor unions.

onstrates that union density exerts a negative impact on a firm's use of temporary employees, whereas Davis-Blake and Uzzi (1993) observe a significantly beneficial effect of the identical union variable on the use of the same non-regular worker group. Similarly, Abraham and Taylor (1996) argue that union density exerts a beneficial effect on the use of independent contractors, while in contrast, Gramm and Schnell (2001) state that the same union variable affects the use of independent contractors and temporary help agency workers in a negative way. An empirical analysis by Houseman (2001) shows that union density adversely influences firms' use of temporary help agency labor, fixed-term employees, and part-timers in a significant way, while the same variable exerts a beneficial effect on the use of independent contractors, albeit without statistical significance. Interestingly, Uzzi and Barness (1998) demonstrate that union density shows a nonlinear ("inverse U-type curve") causality with the intensity of firms' use of temporary and part-time employees. In addition, in some studies, it is argued that the labor-management climate, as indicated by the experience of labor disputes and management's perspective on union activities, is more or less inversely related to firms' use of non-regular labor (Uzzi and Barness 1998; Lee and Lee 2003).

The conflicting results in the existing literature reveal that union density as a proxy of union's power exerts complex effects on the use of non-regular employment in general and on the use of various patterns of non-regular employment. This can be related to the fact that the effect of union's organizational power on non-regular employment is characterized by dual aspects (Lautsch 2002; Houseman 2001; Uzzi and Barness 1998; Davis-Blake and Uzzi 1993; Lee and Lee 2003). Houseman (2001) indicates that labor unions play a dual role as both motivator and constrainer in terms of employers' strategy to use non-regular labor. As a matter of fact, labor unions may encourage and accommodate employers' use of unorganized non-regular workers by forging adversarial relations with management, imposing high labor costs and rigid work rules, and demanding a buffering labor resource to secure their regular (worker) members' employment and ease work burdens. At the same time, labor unions are concerned about the fact that regular workers' jobs are replaceable and that their organizational base may be eroded. They may, therefore, restrict employers' motivation to utilize non-regular labor by directly blocking recruitment of this worker group or organizing them, and by indirectly cooperating with workplace innovations initiated by the management to promote the functional flexibility of regular workers.[3]

[3] Along this line, Carre, duRivarge, and Tilly (1995) categorize union's strategic reaction to non-regular employment, as follows: (1) exploiting the opportunity of labor flexibility, (2) limiting or preventing the growth (of non-regular labor), (3) controlling employment conditions (of non-regular workers), and (4) supplementing employer-provided benefits. In addition, Bray (1991) identifies four potential responses from unions to atypical employees: (1) ignorance, (2) exclusion and opposition, (3) limit and regulation, and (4) recruitment and integration (non-regular workers) into union structures and processes.

In this regard, the concept of union density, as commonly referred to in the existing studies, is insufficient as a sole variable to identify the union effect on firms' use of non-regular labor. In order to elucidate the union effect on employers' use of non-regular labor, it is necessary to delve into various attributes of labor unions. First, we consider the dimension of union power as a key attribute in union's effect on managerial strategy to use non-regular labor. The "union density" variable can function as a quantitative indicator of union power, as already noted in previous studies.[4]

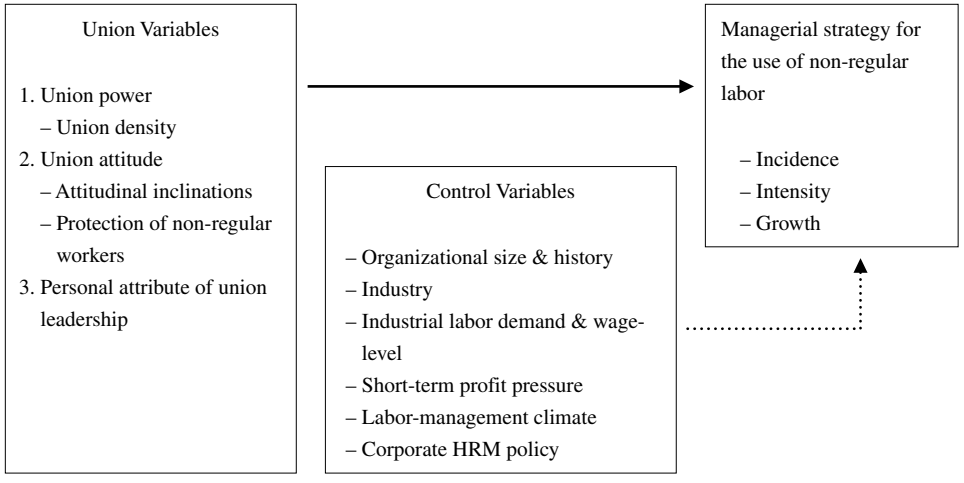
Secondly, labor unions' attitudinal inclinations are included as a different dimension of union attributes which influence employers' reliance upon non-regular employment, because they are a significant factor in shaping labor union's strategic choices and behavioral patterns in response to managerial approach to labor flexibility, including the use of non-regular labor. At the same time, we can suggest that these two dimensions of union power and union attitude do not independently affect the managerial use of non-regular labor, but perform an interactive function that influences the mixed strategy of management's human resources (HR) encompassing core regular and peripheral non-regular workforce. In fact, the effect of union's attitudinal inclination on the managerial use of non-regular labor is mediated by union's power (i.e., union density) and vice versa. Therefore, it might be interesting to examine in what way the interactive function of union's power and attitude affects the use of non-regular employment.

Unions' attitudinal inclinations can be evaluated by their ideological considerations of labor-management relations (adversarial versus cooperative) and union movement (business unionism versus social unionism). Yet, the impact of labor unions' attitudinal perspectives on the employment of non-regular labor, which has hardly been investigated in the existing literature, may be very complicated. Labor unions—their leaders and members—displaying an adversarial attitude to labor-management relations and pursuing social unionism tend to oppose the introduction of flexible labor markets and restrict management's attempt to adopt a market-driven employment policy that includes the use of non-regular labor. At the same time, the very existence of such recalcitrant unions encourages employers to rely upon the unprotected (non-regular) workforce. Similarly, labor unions supporting cooperative business unionism may display dualistic interactions with the use of non-regular labor. This being the case, the way in which labor unions' attitudinal inclination affects the use of non-regular employment will be examined later in our analysis.

In addition, whether or not labor unions make efforts to represent the interests of

[4] At the initial stage of our empirical analysis, we also include the extent of union members' participation in union activities as another variable of union power. However, since the results of our analysis reveal consistently that this variable does not exert a meaningful effect on the use of non-regular labor, it is excluded from the final analytical model.

Fig. 1. Analytical Diagram



unorganized non-regular workers within their establishments can also be used as an indicator of their attitude not only in relation to this worker group, but also in relation to the employers' strategy to pursue the HR mixed model (Lee and Frenkel 2004).

Lastly, the personal attributes (i.e., job tenure, age, and educational background) of union leadership are included in our analytical model. Because union leaders play a key role in implementing a policy for dealing with managerial strategy to externalize employment structure, it is necessary to consider their personal attributes as causal factors in examining the union effect on the managerial use of non-regular labor.

Figure 1 depicts our analytical diagram. It includes three categories of union variables to be examined in order to identify their causal relationship with managerial strategy to use non-regular labor. As noted in Figure 1, a set of additional variables which control union effect across sample establishments was chosen by referring to the relevant research literature, and both union and control variables were extracted and operationalized based on the questionnaires of the KLI workplace panel survey.

III. DATA AND VARIABLES

A. *Data*

Our study draws upon the KLI workplace survey, which was conducted between June and October in 2002. The survey, which is comprised of three sets of questionnaires for managers of HR departments, managers of labor relations departments,

TABLE I

OVERVIEW OF SAMPLE DATA

	Frequency	Percentage
Industry:		
Nonmanufacturing	596	45.74
Manufacturing	707	54.26
Employment size:		
Below 50	312	23.94
50–100	274	21.03
100–299	356	27.32
300–999	254	19.49
1,000 and above	107	8.21
Trade union:		
Nonunionized	828	63.55
Unionized	475	36.45
Non-regular employment:		
No use	538	41.29
Use	765	58.71

Source: 2002 Korean Labor Institute Workplace Panel Survey Data.

and worker representatives (including union officials at unionized establishments), targeted 2,000 establishments, selected from the Korean Employment Insurance DB by applying a stratified random sampling method in relation to the industry and employment size of establishments. The response rate was 87.5 percent (1,749 establishments). Our analysis relies primarily on the survey data set, inputted by managers of labor relations departments, and only partially uses the other data sets inputted by managers of HR department and worker representatives in order to extract some variables necessary for our analysis.

Our analytical models are based on two data sets. The first data set, which is used for the statistical analysis of both unionized and nonunion establishments, comprises 1,303 valid cases. This was achieved by the exclusion of incomplete cases (446) with missing values for variables of the regression model (Table III). The distribution of the first sample data is displayed in Table I. In particular, 58.7 percent of the sample establishments use any type of non-regular labor (as noted below). The number of non-regular workers, hired by sample establishments in the analysis, ranges from one to 10,220, with an average of 142.6. The second data set, which is used for our analysis of unionized establishments, consists of 261 cases, obtained by removing incomplete cases (214) with any missing values for variables of the analytical models (Tables IV and V).

B. *Variables*

Dependent variables comprise the incidence, intensity of, and growth in employers' use of non-regular labor. These dependent variables denote the following:

(1) Incidence: whether non-regular labor is used in the surveyed establishments;
(2) Intensity: the proportion of non-regular workers in total employment (including both regular and non-regular employees) at each establishment; and
(3) Growth: whether the use of non-regular employment has increased since the 1997 economic crisis.

The survey questionnaire, in which it is asked what type of non-regular labor employers use, lists all the patterns of atypical employment used in Korean establishments, including part-timers, fixed-term and daily workers, on-call workers, temporary help agency workers, contract workers, and independent contractors. In our analysis, the intensity is sub-categorized into three specific variables: the total intensity (*Intensity_1*) of all non-regular employees, the intensity (*Intensity_2*) of directly employed non-regular workers (i.e., part-timers, fixed-term and daily workers, and on-call workers), and the intensity (*Intensity_3*) of indirectly employed non-regular workers (i.e., temporary help agency employees and contract workers).[5] Independent contractors are excluded from the analysis of the latter two intensity variables—direct and indirect non-regular employment, since the nature of their employment relations differs in these two subgroups and their size is negligible. As for the intensity variables consisting of left-censored data by the low limit of 0 percent, we apply the Tobit model, which is designed for regression analysis of such censored data. Prior to conducting the Tobit analysis, the distribution of error term is checked by examining various distribution patterns (i.e., normal, exponential, Weibull, logistics, etc.). Among the alternative distribution patterns, since the logistic distribution best fits to our model specification, the Tobit analysis for the intensity variables is carried out in the form of logistic distribution.[6] Besides, incidence and growth are both examined as dummy variables (use = 1; increase = 1) by logit regression models, which analyze the determinants of the use of non-regular labor in the combined sample of union and nonunion establishments.

Union effect is evaluated based on four sets of union variables. Firstly, the vari-

[5] In accordance with a referee's comment, we tried to limit the sample to unionized establishments employing non-regular workers and estimate the proportion of directly and indirectly employed non-regular workers among total non-regular employees as dependent variables, which are examined by Tobit analysis. The results of the Tobit models analyzing these dependent variables, illustrated in Appendix Table, are largely consistent with those of Tobit models including intensity variables (i.e., *Intensity_2 and Intensity_3*).

[6] Uzzi and Barness (1998) point out that Poisson and negative binomial regressions, including the percentage of non-regular workers as a dependent variable (e.g., number of irregular workers divided by total employment), may create a forced correlation with explanatory variables using total employment as their denominator. They also highlight the statistical validity of ordered logit analysis in this case. Accordingly, we applied ordered logit analysis for the regressions of the intensity variables, as suggested by Uzzi and Barness (1998). However, we could not detect any noticeable difference in the signs and the significance of the estimated coefficients between the Tobit models and the ordered logit models. Thus, we chose the Tobit regression models for the convenience of empirical analysis.

able of *Union_dummy* (whether unionized) is applied only to the regression analysis to compare the use of non-regular labor between union and nonunion establishments. Secondly, union power is estimated based on the union density (*Union_density*), which calculates the number of union members divided by the total number of regular employees. In order to confirm the nonlinear effect of union density (as noted in Uzzi and Barness 1998), we also add the variable of union density squared (*Union_density [sq]*) to the regression model.

Thirdly, the union's attitudinal inclinations are estimated based on three specific variables, representing the ideological perspective, orientation for labor movement, and reaction to non-regular labor. The union's ideological perspective (*Union_att1*) is determined by a questionnaire with a 7-point scale, in which it is asked whether the union leadership considers the nature of labor-management relations as adversarial or harmonious. Similarly, the union's orientation toward the labor movement (*Union_att2*) is estimated by a questionnaire with a 7-point scale, in which it is asked whether the union leadership pursues pragmatic unionism—improvement of members' working conditions within the establishment, or social unionism—strengthening of union influence over social policy issues. In addition, union's reaction to non-regular labor (*CB_NRW*) is determined by a questionnaire addressing how often the union handles issues to represent the interest of non-regular employees through collective bargaining (0 = never; 1 = often; 2 = always).

Lastly, a variable related to the personal attribute—job tenure (*Leader_tenure*)—of the union's president is included in our regression model. It may hypothetically be assumed that the longer the job experience of the union leaders in their own establishments, the more accommodating will be their attitude toward a managerial strategy to use non-regular labor.

In order to determine how the interactive function of union's power and attitude influences employers' use of non-regular labor, two interactive variables (*Union_density*∗*Union_att1* and *Union_density*∗*Union_att2*) are inserted into the regression models for the unionized establishments.

As noted above, our analysis includes the following nine control variables. The first is the employment size of the establishment (*Estab_size*), calculated on the basis of the total number of regular employees. As in the case of the existing studies, this variable is transformed into the logarithm for our analysis. Second, the age of the establishment (*Estab_age*) is estimated by deducing from the year 2002 the foundation year of the establishment. Third, we include the variable of short-term profit pressure (*Profit_pressure*) to control the union effect across establishments, by using a questionnaire with a 5-point scale, in which it is asked how much pressure from the headquarters (HQ) office or stockholders for short-term profit the establishment is confronted with (1 = not at all, 5 = very much). For this variable, which may be a proxy to examine the extent of market competition, Osterman's measurement (1994b) was adopted. The fourth control variable is the relative wage

level (*Relative_wage*) of the establishment, compared with other establishments in the same industrial sector, with a 5-point scale (1 = much lower, 5 = much higher), and the fifth is the industrial dummy variable (*Industry*: manufacturing and mining sectors = 1, other sectors = 0). The sixth control variable is an indicator of labor demand fluctuation (*Labor_demand*) in seven industrial sectors (i.e., agriculture and fisheries, manufacturing and mining, construction, retail/wholesale and food/ hotels, transportation/ storage and telecommunications, financial sector and real estate, and social and personal service), which is calculated by the standard deviation of the 10-year (1992–2001) industrial GDP index, divided by its mean for each industrial sector.[7] This variable, which links labor demand to the cyclicality of commodity markets by industry, is a meaningful control for the union effect, in that establishments under more fluctuating market conditions have a stronger need for labor flexibility and, therefore, for the use of disposable labor. As pointed out by Kim (2003), our estimated variable of labor demand is more advanced than those of the existing studies (Abraham and Taylor 1996; Houseman 2001; Gramm and Schnell 2001), which commonly use the change of industry-level employment size as a proxy of labor demand fluctuation.

As for the regression models for unionized establishments, three more control variables are added. Two control variables represent the climate of the labor-management relations of the establishment. One (*LM_clim*) is determined based on the average of four questionnaires on a 5-point scale, in which it is asked whether management and worker representatives (or union officials) in the establishment would promote mutual understanding and information sharing, would make a common efforts to solve problems, and whether they display confrontational relationships (reversed coding) on a 5-point scale (1 = not at all, 5 = very much). The other (*Strike_dummy*) is a dummy variable indicating whether the establishment has experienced union strike action during the past three years. In addition, a control variable (*HRM_policy*) reflecting the strategic approach of corporate HRM (human resource management) strategy is included.[8] This control variable, which denotes management's strategic choice to adopt a cost-reduction HRM model or a commitment-enhancing model, is measured by a factor value of five related questionnaires,

[7] Multicollinearity between labor-demand and industry dummy is examined, as pointed by one of referees. We don't find any problem of multicollinearity between the two variables. Labor-demand and industry dummy have high correlation (correlation coefficient = 0.447, $p < 0.001$), yet don't show any multicollinearity problem, which is estimated by the VIF (variance inflation factor) of OLS.

[8] Since Walton's typology (1985), the ideal types of HRM policy have been categorized into the control or "buy" model and the commitment or "make" model by the school of strategic HRM. We include a control variable measuring the differing types of HRM policies, so that management's strategic choice of these HRM models on how to manage regular employees, would be a significant factor to influence the use of non-regular labor as well as the attitude of labor unions representing their members (mainly regular employees).

TABLE II

MEASUREMENT AND DESCRIPTIVE STATISTICS FOR VARIABLES

Variables	Measurement	N	Mean	S.D.
Incidence	1 if establishments use NR workers	1,303	0.59	0.49
Growth	1 if the no. of NR workers increased in the last five years	1,303	0.27	0.44
Intensity_1	Proportion of NR workers among total employees	1,303	0.10	0.16
Intensity_2	Proportion of part-time/temporary/on-call workers among total employees	1,303	0.06	0.13
Intensity_3	Proportion of temp. help agency and contract workers among total employees	1,303	0.03	0.10
Estab_size	Total number of regular employees, as measured by Houseman (2001)	1,303	461.13	1,947.78
Estab_age	The year 2002 minus the foundation year of the establishment, as measured by Uzzi and Barness (1998)	1,303	19.08	14.78
Profit_pressure	Pressure for short-term profit (5 point: 1 = not at all; 5 = very much), as measured by Osterman (1994b)	1,303	2.00	1.13
Relative_wage	Wage level (5 point: 1 = much lower; 5 = much higher), compared with other firms in the same industry, as measured by Gramm and Schnell (2001)	1,303	2.89	0.78
Industry	Manufacturing and mining = 1	1,303	0.54	0.50
Labor_demand	10-year variation of GDP by 7 industrial sectors (s.d. divided by mean)	1,303	0.21	0.05
Union_dummy	Unionized = 1	1,303	0.36	0.48
Union_density	Number of union members divided by total number of regular employees	261	0.53	0.24
Union_att1	Union's ideological perspective on labor-management relations (7 point: 1 = interest conflict; 7 = interest harmony)	261	4.92	1.53
Union_att2	Union's orientation for labor movement (7 point: 1 = pragmatic unionism; 7 = social unionism)	261	2.51	1.46
CB_NRW	How often non-regular workers' interest was represented in collective bargaining (0 = never, 1 = often, 2 = always)	261	0.61	0.67
Leader_tenure	Union president's job tenure years	261	14.93	6.25
LM_clim	Averaged value of the following four survey items to examine labor-management climate on a 5-point scale (1 = not at all, 5 = very much) —making efforts for mutual understanding —information sharing —making common efforts for solving company's problems —confrontational union-management relations (reverse coding)	261	3.84	0.66
Strike_dummy	Experience of union strike during the past 3 years = 1	261	0.08	0.28
HRM_policy	Factor value of the following five survey items to examine the strategic direction of corporate HRM in a 7-point range —labor cost reduction vs. employee commitment —employment adjustment vs. employment security —use of non-regular labor vs. use of regular labor —focus on individual performance vs. focus on teamwork —short-term performance vs. long-term career development	261	0.00	1.00

in which it is asked where corporate HRM policy is located in a 7-point range between the two models.

Table II lists the measurement of and descriptive statistics for variables in our analysis.

IV. RESULTS OF DATA ANALYSIS

A. *Union Effect in General*

Table III summarizes the results of regression analysis for the total sample (N = 1,303), including both union and nonunion establishments. A notable finding in Table III is that the existence of labor unions exerts a significantly positive impact on all the dependent variables related to the managerial strategy to use non-regular labor. In other words, labor unions in Korea, to a certain extent, tend to play the role of a motivator, rather than a constrainer, for employers' use of non-regular labor, in terms of incidence, growth, and intensity (including both direct and indirect employment patterns). This reveals that employers in unionized establishments are more likely to rely on the use of cheaper and disposable labor outside unions' protection than their counterparts in nonunion systems, since they need to avoid higher (or above market price) labor costs[9] and the employment rigidity in relation to regular workers, imposed by labor unions. Moreover, this preference for using non-regular labor may be encouraged by the militant unionism in Korea.

All the control variables, except for the age of the establishment and relative wage level, show statistically significant results. Employment size (*Estab_size*), whose impact has been noted to be very complicated—possibly positive or negative—in the existing studies (i.e., Davis-Blake and Uzzi 1993; Abraham and Taylor 1996; Kalleberg and Reynolds 2000), exerts a significantly positive effect on the incidence of and growth in the use of non-regular labor, as well as intensity but only in the case of indirect employment patterns. In Korea, the negative function of employment size, which is largely attributable to the existence and re-deployability of more slack human resources in large firms, appears to be overridden by the positive impact derived from those large firms' strategic move to unbundle the bureaucratic organizational structure and replace permanent jobs with (and particularly indirectly employed) non-regular ones, along with their temporal need to use external labor for covering ad hoc job vacancies and the need for specific expertise. This is linked to the fact that in Korea, large firms, which have traditionally enjoyed a monopoly position in the domestic product market, have experienced increasing constraints within the context of intense competition and business uncertainty re-

[9] According to the Korean Economic Population Survey—additional survey conducted in 2001, the averaged monthly wage of non-regular workers amounts to only 52.6 percent of regular workers' wage (Lee and Kim 2003).

TABLE III

REGRESSIONS FOR THE TOTAL SAMPLE (N = 1,303)

Variables	*Incidence*	*Growth*	*Intensity_1*	*Intensity_2*	*Intensity_3*
Intercept	–0.655	–2.608***	0.084*	0.114**	–0.424***
	(0.421)	(0.452)	(0.049)	(0.046)	(0.064)
Estab_size (log)	0.345***	0.278***	0.008	–0.004	0.048***
	(0.056)	(0.055)	(0.006)	(0.006)	(0.007)
Estab_age	0.004	0.002	0.000	0.001	0.000
	(0.005)	(0.004)	(0.001)	(0.001)	(0.001)
Profit_pressure	0.271***	0.127**	0.026***	0.018***	0.022***
	(0.056)	(0.057)	(0.006)	(0.006)	(0.007)
Relative_wage	–0.033	0.062	0.001	0.000	0.009
	(0.079)	(0.082)	(0.009)	(0.009)	(0.011)
Industry	0.067	–0.093	–0.035**	–0.070***	0.061***
	(0.136)	(0.148)	(0.016)	(0.016)	(0.020)
Labor_demand	–6.535***	–2.177	–0.798***	–0.794***	–0.412*
	(1.414)	(1.500)	(0.168)	(0.159)	(0.216)
Union_dummy	0.453***	0.473***	0.053***	0.049***	0.044**
	(0.157)	(0.159)	(0.018)	(0.017)	(0.020)
Chi-square	144.18***	83.68***	75.85***	96.56***	116.51***

Note: Standard errors are listed in parentheses. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

sulting from economic liberalization. As a consequence, large firms, burdened by rigid rules and high wages for regular workers in the internal labor market, were induced to replace regular employees with non-regular workers under the employment conditions of lower wages and flexible adjustment (Ahn, Cho, and Nam 2002). Moreover, since regular workers in small firms are largely unorganized and, therefore, are very vulnerable to managerial action designed to adjust a redundant labor force, employers of those firms are likely to have less incentive to use non-regular labor to obtain numerical flexibility.

Short-term profit pressure is another variable with a significantly positive influence on the use of non-regular labor. This result, which is consistent with the findings of Gramm and Schnell (2001), indicates that management under stronger short-term profit pressure is likely to use cheaper non-regular labor as a means of reducing the labor costs. In other words, establishments which are more exposed to market competition tend to display a higher reliance on non-regular labor, which is useful for their cost containment.

The labor demand variable, whose coefficient is significantly negative, presents an interesting result at odds with our expectation. Hypothetically, it can be assumed that establishments under an unstable (or highly fluctuating) market demand need to exhibit numerical labor flexibility and, therefore, are likely to rely on more non-regular labor. The finding is opposite to the hypothesis, and may suggest that while Korean firms under stable business conditions tend to replace permanent employ-

ees with non-regular workers to reduce cost or avoid union, other firms under unstable conditions of market demand are forced to adjust the payroll of regular employees at their will, rather than resort to the buffer of disposable non-regular labor to tailor labor supply to market demand. In other words, non-regular labor in Korean firms appears to be used as a substitute for regular employees, and not as a supplement to weather fluctuations in the market demand. This is pointed out in some of the Korean literature related to recent changes in employment practices (Ahn, Kim, and Lee 2003; Lee and Kim 2003).

The use of non-regular labor in the manufacturing (and mining) sector is significantly less common than that in the nonmanufacturing sectors, in terms of overall intensity. More interestingly, the manufacturing sector shows a higher intensity of indirect non-regular employment (i.e., contract and temporary help agency labor) and a lower intensity of direct non-regular employment (temporary and part-time employees) than the nonmanufacturing sectors, and with statistical significance. This may reflect the fact that the nonmanufacturing sectors tend to directly employ temporary employees and part-timers on an individual basis for their less standardized jobs, while the manufacturing sector tends to use indirectly employed workers by contracting out relatively more standardized jobs in bulk to subcontractors or labor supply agents. Besides, neither the relative wage level nor the age of the establishment is statistically significant, with positive signs for all the coefficients except for the former variable on the incidence.

B. *Union Effect in the Organized System*

Table IV presents the results of Tobit regression analysis for "union effect" variables, applied only to unionized establishments (N = 261). Above all, the union density, which is marginally negative for the overall intensity of non-regular employment, shows an interesting contrast between direct and indirect employment patterns. The impact of the union density on the intensity of the direct non-regular employment is significantly positive with a linear shape. Managerial use of direct non-regular labor (i.e., temporary and part-time workers) is proportionately enhanced along with the increase of the union's organizational power (union density). This finding implies that the stronger the union's organizational power, the more motivated management in unionized establishments is to rely on the use of direct non-regular labor. By contrast, the union density shows a "U-type" nonlinear relationship with the intensity of indirect non-regular employment. That is, management under the pressure of lower and higher union density or weaker and stronger union power is more likely to increase the use of indirectly employed non-regular labor (i.e., temporary help agency and contract workers), whereas management in medium-level unionized establishments is less likely to use this type of non-regular labor. This result is sharply at odds with the finding of Uzzi and Barness (1998), indicating that the union density shows an "inverse U-type curve" relationship with

TABLE IV

TOBIT REGRESSIONS FOR UNIONIZED ESTABLISHMENTS (N = 261)

Variables	*Intensity_1*	*Intensity_2*	*Intensity_3*
Intercept	**0.2392***	0.0409	0.0186
	(**0.1284**)	(0.1043)	(0.1300)
Estab_size (log)	**–0.0179****	**–0.0147****	0.0091
	(**0.0074**)	(**0.0060**)	(0.0076)
Estab_age	0.0003	0.0001	–0.0001
	(0.0005)	(0.0004)	(0.0006)
Industry	–0.0199	**–0.0754*****	**0.0878*****
	(0.0210)	(**0.0174**)	(**0.0239**)
Labor_demand	**–0.4264****	–0.2043	**–0.5994****
	(**0.2106**)	(0.1680)	(**0.2546**)
Profit_pressure	0.0098	**0.0125****	0.0025
	(0.0074)	(**0.0060**)	(0.0075)
Union_density	–0.0528	**0.2807*****	–0.2238
	(0.2030)	(**0.1717**)	(0.2135)
Union_density (sq)	–0.0293	–0.3529	**0.3168*****
	(0.1413)	(0.1169)	(**0.1439**)
Union_att1	0.0034	0.0049	0.0006
	(0.0154)	(0.0124)	(0.0152)
Union_att2	0.0047	0.0027	0.0081
	(0.0162)	(0.0136)	(0.0163)
CB_NRW	**0.0471*****	**0.0523*****	0.0032
	(**0.0136**)	(**0.0115**)	(0.0142)
Leader_tenure	–0.0007	0.0015	–0.0025
	(0.0015)	(0.0013)	(0.0016)
LM_clim	0.0098	0.0000	0.0231
	(0.0154)	(0.0124)	(0.0158)
Strike_dummy	0.0373	0.0043	0.0169
	(0.0347)	(0.0273)	(0.0327)
HRM_policy	**–0.0179***	0.0024	**–0.0211****
	(**0.0092**)	(0.0076)	(**0.0100**)
Union_density $*$ *Union_att1*	–0.0072	0.0024	–0.0226
	(0.0258)	(0.0211)	(0.0261)
Union_density $*$ *Union_att2*	0.0060	0.0135	–0.0126
	(0.0253)	(0.0211)	(0.0268)
Likelihood ratio	92.9862***	93.0990***	77.8802***

Note: Standard errors are listed in parentheses. $^{*}p < 0.10$; $^{**}p < 0.05$; $^{***}p < 0.01$.

the intensity of temporary and part-time workers.[10] As for the intensity of indirectly employed non-regular labor in Korean firms, we may offer a different interpreta-

[10] Uzzi and Barness (1998) interpret the "inverse U-type curve" relationship between the level of unionization and the use of directly employed non-regular labor as follows: the management in medium-level unionized organizations displays a stronger motivation and ability to undermine union power, compared with those with low and high levels of unionization.

tion, according to which the management in low-level unionized establishments (where employers can overpower the "weak" union) and highly unionized establishments (where employers deal with high cost of labor-management relations) tend to use a larger number of indirectly employed non-regular workers, lacking direct employment relations with these establishments, than their counterparts in medium-level unionized establishments. It should be considered that indirectly employed non-regular labor is a permanent replacement of regular jobs, while directly employed non-regular labor is a contingent buffer for regular workers. In this regard, although the management in organizations with low-level unionization shows little motivation to use contingent labor for weathering the changes in the market demand or for undermining union power, yet it may be highly induced to outsource some part of the business activities to decrease the labor cost, with minimal union resistance. Management in highly unionized organizations may consider that the externalization of regular (union) jobs to subcontractors or temporary help agencies is a strategic means to weaken the union's power base, as identified in Korean manufacturing firms with a high level of unionization. The organization with moderate levels of unionization is less motivated to use indirectly employed non-regular labor, by controlling the proper level of directly employed non-regular labor.[11] This finding implies that the effect of the union density is different between directly employed and indirectly employed non-regular labor. To sum up, management can select the use of different types of non-regular employment in dealing with union power and for other reasons.

Table IV shows that both variables (*Union_att1* and *Union_att2*), indicating union's attitudinal inclinations, do not exert a meaningful impact on the intensity of non-regular employment, albeit showing overall a plus sign. The two interactive variables of union density and union attitude also display an insignificant causal effect on the use of non-regular labor, although they function in opposite directions. At the same time, the union's effort to represent the interests of non-regular workers (i.e., through collective bargaining) tends to increase the intensity of non-regular labor, particularly for the entire group and the directly employed group. This is an unexpected and confusing finding that should be carefully interpreted. A possible interpretation is that the union's effort to protect non-regular workers is an ex post facto reaction, rather than a prior constraining move. That is, labor unions may try to control and improve the working conditions of non-regular employees in response to management's increasing use of non-regular labor, thereby assuming an inverse causality. Job tenure of union leaders is not found to exert a significant impact on the intensity of non-regular labor, with conflicting directions between the directly employed type (positive) and indirectly employed type (negative).

[11] This interpretation needs to be verified by additional longitudinal research, as noted by Uzzi and Barness (1998).

Two control variables—labor-management climate and union strike experience added to the regression analysis of the unionized establishments—are not statistically significant, although they display a positive sign. At the same time, HRM policy exerts a substantially negative impact on the use of non-regular labor for the entire sample and the indirectly employed type, while exerting an insignificantly positive effect on the directly employed group. This may be consistent with the existing research findings according to which firms adopting a HRM strategy to enhance regular employees' commitment and loyalty are less likely to use non-regular labor than firms adopting a cost reduction–oriented HRM policy. Other control variables in this regression model show more or less similar results to those in Table III, in terms of effect direction. The only notable aspect is that the employment size in the sample of unionized establishments exerts a significantly adverse influence on the intensity of the entire and directly employed non-regular worker group, which is at odds with the same variable's effect in the total sample in Table III. We may infer from this finding that, in the unionized system, larger firms tend to be more motivated to rely on functional flexibility of internalized (regular) labor, instead of the use of numerically flexible (non-regular) labor, than small-sized firms. However, this tricky interpretation leads us to delve further into the effect of other determinants (including union variables) on the managerial use of non-regular labor in large and small establishments in the unionized system. Furthermore, given the pronounced segmentation of labor markets between large and small firms in Korea (as noted above), we can suggest that since the employment systems of large firms operate differently from those of small ones, it is reasonable to divide the sample of unionized establishments into two subgroups according to firm size and compare the union effect on the use of non-regular labor between the two groups.

C. *Comparison of Union Effect between Large and Small Establishments*

Table V presents the results of the Tobit regression analysis for the two subgroups of the unionized establishment sample, divided by the size of regular employment (= 300). In the Tobit regression models, there are several commonalities between large and small establishments. Union's representation of non-regular workers and industry shows a common sign and the estimated coefficients are significant for the two sample subgroups. This is identical with the regression results listed in Tables III and IV. In addition, union density commonly shows an "inverse U-type curve" relationship with the intensity of direct non-regular labor for both large and small establishments. These results are somewhat different from the above findings (positive linear effect) in Table IV, while being consistent with the findings of Uzzi and Barness (1998). Within each sample subgroup with a more comparable employment size, it can be interpreted that management at the medium-level union density is more motivated to use direct non-regular labor than their counterparts dealing with a weak union with low membership and a strong union with high

TABLE V

TOBIT REGRESSIONS FOR UNIONIZED ESTABLISHMENTS DEPENDING ON EMPLOYMENT
Size Classified Based on the Criteria of 300 Employees

Variables	Small Establishment (Estab_size < 300)			Large Establishment (Estab_size ≧ 300)		
	Intensity_1	*Intensity_2*	*Intensity_3*	*Intensity_1*	*Intensity_2*	*Intensity_3*
Intercept	**0.3265***	0.0002	0.3182	–0.2421	–0.1377	–0.2327
	(**0.1867**)	(0.1710)	(0.2238)	(0.1577)	(0.1127)	(0.1640)
Estab_age	–0.0003	0.0014	**–0.0025***	0.0003	–0.0003	0.0006
	(0.0012)	(0.0011)	(**0.0014**)	(0.0005)	(0.0004)	(0.0005)
Industry	–0.0633	**–0.1321*****	**0.1013****	0.0089	**–0.0480*****	**0.0798*****
	(0.0387)	(**0.0359**)	(**0.0461**)	(0.0242)	(**0.0171**)	(**0.0279**)
Labor_demand	–0.1563	0.0761	–0.6944	**–0.5634***	**–0.4079****	–0.3698
	(0.3206)	(0.2912)	(0.4241)	(**0.2900**)	(**0.1942**)	(0.3407)
Profit_pressure	0.0170	0.0128	0.0088	0.0068	**0.0105***	0.0016
	(0.0142)	(0.0124)	(0.0159)	(0.0081)	(**0.0058**)	(0.0082)
Union_density	–0.1643	0.2115	–0.3733	0.3967	**0.4284****	0.0840
	(0.3316)	(0.3161)	(0.4022)	(0.2443)	(**0.1845**)	(0.2590)
Union_density (sq)	–0.3222	**–0.6205*****	0.2015	0.0183	**–0.2961****	**0.3233****
	(0.2448)	(**0.2356**)	(0.2701)	(0.1559)	(**0.1214**)	(**0.1648**)
Union_att1	–0.0224	–0.0236	0.0003	**0.0451****	**0.0258***	0.0192
	(0.0234)	(0.0221)	(0.0286)	(**0.0191**)	(**0.0134**)	(0.0190)
Union_att2	–0.0206	–0.0108	–0.0179	0.0292	0.0071	**0.0371***
	(0.0267)	(0.0253)	(0.0302)	(0.0189)	(0.0141)	(**0.0192**)
CB_NRW	**0.0435***	**0.0751*****	–0.0166	**0.0420*****	**0.0316*****	0.0155
	(**0.0246**)	(**0.0218**)	(0.0287)	(**0.0154**)	(**0.0109**)	(0.0161)
Leader_tenure	0.0006	0.0014	0.0020	–0.0021	0.0014	**–0.0047*****
	(0.0024)	(0.0022)	(0.0030)	(0.0018)	(0.0014)	(**0.0018**)
LM_clim	0.0019	0.0128	–0.0185	**0.0355****	0.0047	**0.0465*****
	(0.0283)	(0.0254)	(0.0354)	(**0.0166**)	(0.0119)	(**0.0170**)
Strike_dummy	**0.1548***	**0.2320*****	–0.0314	0.0143	–0.0212	0.0272
	(**0.0907**)	(**0.0807**)	(0.0961)	(0.0306)	(0.0202)	(0.0310)
HRM_policy	–0.0044	0.0190	–0.0226	**–0.0223****	–0.0078	–0.0122
	(0.0155)	(0.0144)	(0.0192)	(**0.0111**)	(0.0077)	(0.0113)
Union_density ∗ *Union_att1*	0.0322	0.0446	–0.0105	**–0.0725****	–0.0264	**–0.0557***
	(0.0424)	(0.0399)	(0.0535)	(**0.0305**)	(0.0217)	(**0.0310**)
Union_density ∗ *Union_att2*	0.0394	0.0269	0.0290	–0.0291	0.0046	**–0.0510***
	(0.0464)	(0.0446)	(0.0552)	(0.0280)	(0.0205)	(**0.0300**)
Likelihood ratio	46.3766***	49.9910***	41.1436***	53.1460***	46.3518***	42.9152***
N	116			145		

Note: Standard errors are in parentheses. $^{*}p < 0.10$; $^{**}p < 0.05$; $^{***}p < 0.01$.

membership. It should be noted that union density exerts a "U-type curve" effect on the intensity of indirect non-regular labor only for large establishments. This is similar to the regression model in Table IV.

More interestingly, there are several differences in the function of other causal

factors, including some union variables, between large and small establishments. In particular, the subgroup of large establishments presents more noticeable results related to the union effect on the use of non-regular labor than does the small establishment subgroup, where the union's power and activity are relatively very weak. Firstly, the union ideological perspective on labor-management relations (*Union_att1*) is significantly positive for the use of the entire non-regular labor and direct non-regular labor force only in large establishments. This implies that the union leadership (of large establishments) with a cooperative perspective on union-management relations is more likely to adopt a managerial strategy to use non-regular labor in general and directly employed non-regular workers in particular than the union leadership with a confrontational attitude. Secondly, the other attitudinal variable, indicative of the union's orientation to labor movement, also exerts a significantly positive effect on only the use of indirect non-regular labor in large establishments. This result, however, reveals a contrasting function of this attitudinal inclination, in that union leadership promoting social unionism is more likely to take a recalcitrant stance in dealing with firm-level labor issues (than the counterparts in the line of pragmatic unionism), and, as a result, encourages management to expand the use of indirect non-regular labor.

Thirdly, the interactive function of the union's power and attitudinal inclinations is more conspicuous in the subgroup of large establishments than in the subgroup of small establishments. The interaction of union density and union leadership's ideological perspective (*Union_att1*) is significantly negative about the use of non-regular labor in general and indirect non-regular labor in particular, only in large establishments. Within the same subgroup, the interactive function of union density and union leadership's labor movement orientation (*Union_att2*) also exerts a significantly negative impact on the managerial use of indirect non-regular labor. This finding reveals how the union's power and attitudinal inclinations function interactively, in the case of large establishments, as follows:

(1) The effect of union leadership's ideological perspective on the use of non-regular labor is negatively related to the union density. This implies that cooperative union leadership under a higher organizational density is, to some extent, likely to refrain from adopting a managerial strategy to use non-regular labor, because it may be more conscious of internal union politics and members' concerns.
(2) By contrast, the impact of the union density on the use of indirect non-regular labor is related to the union leadership's ideological perspective in a negative way. That is, union power to regulate managerial use of indirect non-regular workers may be mitigated by the leadership's cooperative stance.
(3) The interactive function of the union density and union leadership's labor movement orientation for the use of indirect non-regular labor appears to be somehow more complicated. Although the effect of the two individual union

variables is represented by a "U-type" curve and shows a positive linear shape, the interactively combined function is significantly negative. In other words, the two variables interact with each other in a deductible, not additive, way. The effect of the union density is reduced by the change in the union leadership's labor movement orientation multiplied by the coefficient (–0.051) of the interactive variable, and vice versa. Simply speaking, to some extent, union power and union leadership's labor movement orientation are likely to constrain managerial strategy to use indirect non-regular labor through their interaction.

Briefly, the three findings of interactive function between union's power and attitudinal inclinations indicate that the two union variables are commonly related in the negative direction, whether in a one-way or two-way form.

Fourthly, job tenure of union leaders in large establishments, which does not show a meaningful result in the regression model of Table IV, exerts a negative impact on the use of indirect non-regular labor with statistical significance. According to this finding and contrary to our expectation, union leaders with a longer job experience are more likely to try to prevent the management from using indirect non-regular labor, which might replace regular workers' jobs on a permanent basis.

Among the control variables, the experience of union strike exerts a significant effect on the use of non-regular labor. This occurs only in small establishments, and in a negative way. This implies that employers in small establishments are more sensitive to the union's strike action than those in large establishments, and that, as result, union's strike action may lead the management of small establishments to expand the use of non-regular labor to weaken the union's destructive power. The results of Tobit analysis for such control variables as *Labor_demand*, *LM_clim*, and *HRM_policy*, are similar to those listed in Table IV, but only for the subgroup of large establishments.

V. CONCLUSION: RESEARCH IMPLICATIONS

Our analysis of the effects of labor unions on the utilization of non-regular labor which draws upon the 2002 KLI workplace panel survey data, presents several interesting implications. Firstly, labor unions in Korean establishments generally tend to play the role of motivator in encouraging employers' use of non-regular labor. This is supported by the fact that unionized establishments are more likely to rely on non-regular employment in terms of its incidence, intensity, and growth than nonunionized establishments. Similarly, the Tobit analysis for the sample of unionized establishments alone reveals that most of the union variables exert a positive impact on the managerial use of non-regular labor, except for union leaders' job tenure and union density's nonlinear effect. In short, within the Korean context of industrial relations, the unions' motivator role for managerial use of non-regular

labor is more evident than its constrainer role. However it should be noted that the union's motivating effect could function in various ways, by either threatening corporate competitiveness through militant unionism or accommodating management's strategy to enhance labor flexibility through cooperative unionism. The former scenario may be seen in the Korean context where there are confrontational labor-management practices, and where, in recent years, employers have drastically expanded the use of non-regular labor in order to deal with such managerial problems as the rigidity of employment practices, soaring labor costs, and work stoppages, imposed by labor unions. Therefore, our finding of the unions' motivating role for the use of non-regular labor needs to be linked to a specific national condition of confrontational labor-management climate and militant unionism. It is also noteworthy that the motivating union effect at the local or establishment level is ironically at odds with the national centers' recent effort to constrain employers from using non-regular workers and protect their labor rights. This may be closely related to the decentralized organizational structure of the Korean labor union movement, which is based upon enterprise unionism and weakens the influence of national centers (i.e., the Federation of Korea Trade Unions and the Korea Council of Trade Unions) on local unions.

Secondly, our analysis demonstrates that the union's influence on the managerial strategy to use non-regular labor varies, depending upon specific non-regular employment patterns. For instance, union power (i.e., union density) shows a "U-type" impact on the use of indirect non-regular labor, while affecting directly employed non-regular labor in a positive linear fashion. Similarly, union leaders' personal attribute (i.e., job tenure) influences the use of atypical labor in a contrasting shape—positive for direct non-regular employment and negative for indirect non-regular employment. Thus, we can conclude that specific patterns of non-regular labor may influence regular workers' employment conditions and labor-management power relations in various ways, and that, therefore, labor unions tend to react to those specific patterns of non-regular labor in a different fashion. In this regard, the nature of various non-regular employment patterns needs to be further clarified from the perspective of industrial relations.

Thirdly, the union effect on the use of non-regular labor also is different between large and small establishments. The union's impact on the managerial strategy to externalize the employment structure is more conspicuous in large establishments than in small ones. This may be related to the fact that labor unions in large establishments are more active and influential in representing their members' interests than their counterparts in small establishments with limited financial resources. In particular, the interactive function of the union's power and attitudinal inclinations, which is the focus of our research interest, is found to be significant in the negative direction, only among large establishments. Accordingly, analysis of the difference in the status and influence of labor unions in large and small firms could

be the subject of future research in terms of changes in the employment structure.

In addition, our paper presents an implication for the "segmentizing" effect of labor unions on labor markets in developing countries like Korea. As noted by the World Bank (1995), labor unions have traditionally exerted a dual impact on developing economies—whether positively by improving productivity and increasing social equity, or negatively by their monopolistic behavior and opposition to economic reforms. Since the early 1990s, political democratization and globalization of the national economy in Korea have led labor unions to strengthen their monopolistic attitude of protecting union members (mainly regular workers), rather than to reduce economic discrimination against non-regular workers. As a consequence, the labor unions' monopolistic behavior, encouraging employers' increasing use of unprotected non-regular labor, is partially accountable for the growing polarization of working-life quality between organized insiders (regular workers) and unorganized outsiders (non-regular workers). The Korean case of union effect on labor markets may offer a useful implication for developing countries following the track of a similar contextual evolution.

REFERENCES

Abraham, Katharine G. 1988. "Flexible Staffing Arrangements and Employers' Short-term Strategies." In *Employment, Unemployment, and Labour Utilization*, ed. Robert Hart. London: Urwin Hyman.

Abraham, Katharine G., and Susan K. Taylor. 1996. "Firms Use of Outside Contractors: Theory and Evidence." *Journal of Labor Economics* 14, no. 3: 394–424.

Ahn, Joo; Joonmo Cho; and Jae Nam. 2002. *Bijunggyu geunro siltaewa jungchakkwaje (II)* [Situation of non-regular labor and policy issues (II)]. Seoul: Korea Labor Institute.

Ahn, Joo; Dong Kim; and Si Lee. 2003. *Bijunggyu geunro siltaewa jungchakkwaje (III)* [Situation of non-regular labor and policy issues (III)]. Seoul: Korea Labor Institute.

Baron, James N.; Frank R. Dobbin; and Peter D. Jennings. 1986. "War and Peace: The Evolution of Modern Personnel Administration in US Industry." *American Journal of Sociology* 91, no. 3: 350–83.

Baron, James N., and Peter D. Jennings. 1988. "Mission Control? The Development of Personnel System in US Industry." *American Sociological Review* 53, no. 4: 497–514.

Cappelli, Peter. 1999. *The New Deal at Work*. Boston: Harvard Business School Press.

Carre, Francoise J.; Virginia L. DuRivage, and Chris Tilly. 1995. "Piecing Together the Fragmented Workplace: Unions and Public Policy on Flexible Employment." In *Unions and Public Policy: The New Economy, Law, and Democratic Politics*, ed. Lawrence G. Flood. London: Greenwood Press.

Davis-Blake, Alison, and Brian Uzzi. 1993. "Determinants of Employment Externalization: A Study of Temporary Workers and Independent Contractors." *Administrative Science Quarterly* 38, no. 2: 195–223.

Doeringer, Peter B., and Michael J. Piore. 1971. *Internal Labor Markets and Manpower Analysis*. Lexington: D.C. Heath.

Gramm, Cynthia L., and John F. Schnell 2001. "The Use of Flexible Staffing Arrangements in Core Production Jobs." *Industrial and Labor Relations Review* 54, no. 2: 245–58.

Houseman, Susan N. 2001. "Why Employers Use Flexible Staffing Arrangements: Evidence from an Establishment Survey." *Industrial and Labor Relations Review* 55, no. 1: 149–70.

Hunter, Laurie; Alan McGregor; John MacInnes, and Alan Sproull. 1993. "The 'Flexible Firm': Strategy and Segmentation." *British Journal of Industrial Relations* 31, no. 3: 383–407.

Jacoby, Sanford M. 1985. *Employing Bureaucracy: Managers, Unions, and the Transformation of Work in American Industry, 1900–1945*. New York: Columbia University Press.

Jung, Ee. 1991. "Hangook jejoup nodongshijangui gujo byunwhae gwanhan il yungu" [A study on the structural transformation of labor markets in the Korean manufacturing industry]. *Society and History* 30: 82–117.

———. 2002. "Nodongshijang bulpyungdeunggwa jojiknae bulpyungdeung: 1990nyundae imguem bulpyungdeung chuse yungu" [Inequality of labor markets and intra-organizational inequality: A study on the trends of wage inequity in the 1990s]. *Korean Journal of Sociology* 36, no. 6: 1–26.

Kallberg, Arne L. 2003. "Flexible Firms and Labor Market Segmentation." *Work and Occupations* 30, no. 2: 154–75.

Kalleberg, Arne L., and Jeremy Reynolds. 2000. "Organization Size and Flexible Staffing Arrangements in the United States." In *Nonstandard Work: The Nature and Challenge of Changing Employment Arrangements*, ed. Francoise Carre, Marianne A. Ferber, Lonnie Golden, and Stephen A. Herzenberg. Champaign, Ill.: Industrial Relations Research Association.

Kerr, Clark. 1954. "The Balkanization of Labor Markets." In *Labor Mobility and Economic Opportunity*, ed. E. Wright Bakke, Philip Hauser, Gladys L. Palmer, Charles A. Myers, Dale Yoder, and Clark Kerr. Cambridge, Mass.: MIT Press.

Kim, Dong, and Joo Kim. 2002. "Bijunggyujik hwalyongui yunghyangyoin" [Factors affecting the use of non-regular labor]. *Labor Policy Study* 2, no. 4: 17–38.

Kim, Yoo. 2003. "Giupui bijunggyujik sayongbiyul gyuljungyoin" [Determinants of the intensity in firms' use of non-regular labor]. Paper presented to the first conference of the KLI Workplace Panel Studies, Seoul.

Korea Labor Institute (KLI). 2003. *2003nyun nodong tonggye* [2003 KLI labor statistics]. Seoul: Korea Labor Institute.

Lautsch, Brenda A. 2002. "Uncovering and Explaining Variance in the Features and Outcomes of Contingent Work." *Industrial and Labor Relations Review* 56, no. 1: 23–43.

Lee, Byoung, and Stephen J. Frenkel. 2004. "Divided Workers: A Case Study on Social Relations between Regular and Contract Workers in a Korean Auto Company." *Work, Employment and Society* 18, no. 3: 507–30.

Lee, Byoung, and Yoo Kim. 2003. "Segmented Quality of Working Life in Korea: A Comparison of Regular and Non-regular Workers." Paper presented to the Fifth International Society for Quality of Life Studies, Frankfurt.

Lee, Joo, and Sung Lee. 2003. *Bijunggyujik nosagwangye* [Labor relations of non-regular workers]. Seoul: Korea Labor Institute.

Osterman, Paul. 1984. *Internal Labor Market*. Cambridge, Mass.: MIT Press.

———. 1994a. "Internal Labor Markets: Theory and Change." In *Labor Market Economics and Industrial Relations*, ed. Clark Kerr and Paul D. Staudohar. Cambridge, Mass.: Harvard University Press.

———. 1994b. "How Common Is Workplace Transformation and Who Adopts It?" *Industrial and Labor Relations Review* 47, no. 2: 173–88.

Uzzi, Brian, and Zoe I. Barness. 1998. "Contingent Employment in British Establishments: Organizational Determinants of the Use of Fixed-term Hires and Part-time Workers." *Social Forces* 76, no. 3: 967–1007.

Walton, Richard E. 1985. "From Control to Commitment in the Workplace." *Harvard Business Review*, March–April: 77–84.

World Bank. 1995. *World Development Report: Workers in an Integrating World*. London: Oxford University Press.

APPENDIX TABLE

TOBIT REGRESSIONS FOR UNIONIZED ESTABLISHMENTS USING NON-REGULAR LABOR

	Total Sample		Large Sample (≧ 300)		Small Sample (< 300)	
	Direct	Indirect	Direct	Indirect	Direct	Indirect
Intercept	0.042	0.898**	–0.205	0.808	–0.697*	2.077***
	(0.334)	(0.426)	(0.519)	(0.603)	(0.375)	(0.558)
Estab_size (log)	–0.051**	0.085***	—	—	—	—
	(0.024)	(0.031)				
Estab_age	0.000	–0.001	–0.004*	0.004	0.009***	–0.014***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.005)
Industry	–0.481***	0.568***	–0.471***	0.532***	–0.567***	0.729***
	(0.076)	(0.101)	(0.107)	(0.131)	(0.109)	(0.162)
Labor_demand	0.230	–1.078	–0.268	0.187	0.756	–2.407*
	(0.720)	(1.033)	(1.172)	(1.469)	(0.834)	(1.418)
Profit_pressure	0.036	–0.033	0.044	–0.031	0.001	0.013
	(0.025)	(0.031)	(0.033)	(0.038)	(0.037)	(0.053)
Union_density	1.818***	–1.995***	2.632***	–1.973**	1.286**	–1.809**
	(0.487)	(0.599)	(0.774)	(0.795)	(0.634)	(0.902)
Union_density (sq)	–1.578***	1.714***	–2.266***	1.744**	–1.090	1.520
	(0.488)	(0.606)	(0.726)	(0.767)	(0.664)	(0.962)
Union_att1	0.066***	–0.079***	0.103***	–0.108***	0.045	–0.053
	(0.022)	(0.028)	(0.028)	(0.032)	(0.037)	(0.056)
Union_att2	0.011	–0.021	–0.026	0.029	0.023	–0.035
	(0.023)	(0.029)	(0.034)	(0.037)	(0.031)	(0.047)
CB_NRW	0.126***	–0.134**	0.094	–0.073	0.187***	–0.223**
	(0.047)	(0.061)	(0.065)	(0.076)	(0.064)	(0.097)
Leader_tenure	0.017***	–0.018***	0.020**	–0.021**	0.013*	–0.009
	(0.005)	(0.007)	(0.008)	(0.009)	(0.007)	(0.010)
LM_clim	–0.049	0.038	–0.106	0.112	0.069	–0.089
	(0.052)	(0.066)	(0.071)	(0.083)	(0.076)	(0.118)
Strike_dummy	–0.015	0.032	–0.142	0.164	0.524**	–0.469
	(0.117)	(0.142)	(0.129)	(0.146)	(0.235)	(0.336)
HRM_policy	0.086***	–0.083**	0.013	0.006	0.138***	–0.144**
	(0.032)	(0.042)	(0.046)	(0.054)	(0.044)	(0.064)
Union_density ∗ *Union_att1*	0.086	–0.113	–0.072	0.074	0.205*	–0.316*
	(0.087)	(0.110)	(0.134)	(0.152)	(0.113)	(0.170)
Union_density ∗ *Union_att2*	0.115	–0.096	0.242*	–0.205	0.086	–0.081
	(0.092)	(0.116)	(0.133)	(0.143)	(0.136)	(0.198)
Chi-square	93***	82***	61***	48***	60***	52***
N	223	223	127	127	96	96

Notes: 1. Standard errors are in parentheses. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.
2. "Direct" refers to the percentage of directly employed non-regular workers (i.e., fixed-term and daily workers, part-timers, and on-call workers) divided by the total number of non-regular employees.
3. "Indirect" refers to the share of indirectly employed non-regular workers among total non-regular employees.