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By

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ABSTRACT

UNIONS, GOVERNMENT, AND THE POLITICS OF INDUSTRIAL RELATIONS IN KOREA:

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By

Eunjong Shin

Skepticism toward unions is widespread today; unions are in big trouble in contemporary industrial societies as union density declines. Korea does not seem an exception. Prior research in Korea argued that Korean unionism was in crisis during the 1990s due to the authoritarian labor controls of the government as well as economic transformation towards neo-liberalism. Little is known about the empirical causality between the decline in unionism and governmental labor controls, however. This study empirically examines the changes in union bargaining power from the period of democratization to the IMF-intervention in association with labor control politics and macro economic conditions in Korea. Union bargaining power is measured by union wage effect using both an aggregate panel analysis and micro data analysis. Both approaches allow for simultaneity and heterogeneity bias through applying a sophisticated empirical method.

New evidence of the union/nonunion wage differential counters the prevailing view of unionism-in-crisis. The aggregate panel analysis with logistic transformation shows the positive effects of unionization on real wages during the whole period.

micro data analysis with correction for selection bias reports different outcomes from the prior studies that used a cross-sectional analysis with conventional OLS method. The estimated individual union wage effect is 24, 18, 19, and 21 percent, in liberalization, authoritarian repression, market-oriented controls, and neo-liberalism, respectively. The empirical outcomes imply that Korean unions retained strong bargaining power throughout the 1990s, countering the conventional view that the unions are in crisis. While the effects of the varied labor control strategies on union bargaining power differ, the Korean unions had a somewhat better pay off under authoritarian state-corporatist controls than under market-oriented controls. In addition, due to the existence of strong unionism, the recent economic crisis deepened dualism in the Korean labor market, increasing income inequality between the union and nonunion sectors. Strong unionism is associated with the transformation of the Korean industrial relations system in the future; it implies that the Korean industrial relations system is more likely to shift towards a neo-corporatist model in which both labor and employers get a better pay off.

(Key Words: Politics of Industrial Relations, Union Bargaining Power, Labor Control Strategy, State-corporatist Controls, Market-oriented Controls, Neo-liberal Controls, Union Wage Effects, Selection Bias)

To My Beloved Family

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"The LORD is my shepherd,
I shall not be in want...I will dwell in the house of the LORD for ever."
From Psalm 23

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LIST OF ABBREVIATIONS

BLS	Bureau of Labor Statistics, The United States
BOK	Bank of Korea, Republic of Korea
BSWS	Basic Survey on Wage Structure
CPS	Current Population Survey
EIS	Employment Insurance System
EOI	Export-oriented Industrialization
EWF	Employees Welfare Fund
EWFA	Employees Welfare Fund Act
FE	Fixed Effect Estimates
FKTU	Federation of Korean Trade Unions
HCI	Heavy-Chemical Industrialization
GLS	Generalized Least Square
ILO	International Labour Organization
IMF	International Monetary Fund
IRRC	Industrial Relations Reform Committee
ISI	Import Substitution Industrialization
KCTU	Korean Confederation of Trade Unions
KEF	Korean Employers' Federation
KERI	Korean Economic Research Institute
KLI	Korea Labor Institute
KOILAF	Korea International Labor Foundation
KSIC	Korean Standard Industry Classification
KTUC	Korean Trade Union Council
LSA	Labor Standards Act
MOCI	Ministry of Commerce and Industry, Republic of Korea
MOL	Ministry of Labor, Republic of Korea
NCKTU	Jun-pyung, National Council of Korean Trade Unions
NEEI	National Economy and Education Institute
NESC	National Economy and Society Council
NICs	New Industrialized Countries
NSO	National Statistics Office, Republic of Korea
OECD	Organization of Economic Cooperation and Development
OLS	Ordinary Least Square
RCS	Repeated Cross-Section
RE	Random Effects Estimates
2SLS	Two-Stage Least Square
TC	Tripartite Committee
UN	United Nations
USTR	The United States Trade Representatives

INTRODUCTION

Since the late 1980s, Korea has undergone epochal changes in industrial relations along with a wave of changes in political economic environments. A driving force underlying the changes was the political transition to democracy[1] in 1987, which broke apart long-standing authoritarian industrial relations in Korea. In the period of pre-democratization, Korean industrial relations were dominated by the authoritarian military governments. In the course of rapid industrialization, the government suppressed unionism in order to maintain price-competitiveness based on market-clearing wages in the international niches, while supporting financially and politically competitive Chaebols, Korean conglomerates owned by single families. Due to delayed independent unionism, the fruit of economic growth trickled down to the working class to the degree that it did through the paternalistic labor policies of the government in the forms of job security and relatively comparable earnings,[2] rather than through collective bargaining.

[1] The transition to democracy was a worldwide trend during the 1980s in Asia. As Haggard and Kaufmann (1995) argue, the most remarkable political development in Asia in the same period was the widespread trend away from authoritarian rule toward democracy, which occurred in Korea, Taiwan, Thailand, the Philippines, and Pakistan.

[2] An international comparison of wages and hourly compensation costs (labor costs) implies that relatively high labor earnings persisted in Korea during the 1980s.

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1994
Monthly Wage (US $)												
Korea	241	259	276	292	304	310	334	400	537	732	835	1,272
Taiwan	223	260	268	278	307	319	370	482	595	737	819	1,164
Compensation Costs (US $)												
Korea	0.97	-	-	-	-	1.23	1.31	1.59	2.2	3.17	3.71	6.4
Taiwan	1	-	-	-	-	1.5	1.73	2.26	2.82	3.53	3.93	5.5
Singapore	-	-	-	-	-	2.47	2.2	2.29	2.64	3.15	3.73	6.24
Mexico	-	-	-	-	-	1.56	1.06	1.08	1.25	1.43	1.64	2.53

(Source: KLI Labor Statistics, 2000; U.S. Bureau of Labor Statistics, each year)

Political Transition to Democracy and Korean Independent Unionism

The authoritarian rules in industrial relations were rolled back by the 1987 democratization. As the political transition to democracy forced the government to withdraw the authoritarian control vis-à-vis organized labor, Korean independent unionism evolved dramatically (Ranald, 1999; Kwon and O'Donnell, 1999; Park and Leggett, 1998). During this rise in democracy, unions increased in number from 2,675 in 1986 to 7,883 in 1989, and union density rose from 12 to 18.6 percent in the same period (KLI, 2000). The independent unions grew as a substantial representative to bargain collectively with employers, gaining improved outcomes in wages and benefits during the late 1980s. Real wages in manufacturing increased by 8.3, 11.6, and 18.3 percent in 1987, 1988, and 1989, respectively (KLI, 2000). Labor disputes increased dramatically from 276 in 1986 to 3,749 incidents in 1987, of which 69.7 percent were caused by wage increase issues (Kim, 1995; KLI, 1996). Increasing labor disputes regarding wage bargaining indicate that predominant unilateralism was steadily being replaced by bipartism based on collective bargaining at workplaces.

Economic Transformation and Shifts in Labor Controls

Another remarkable factor was the economic transformation underlying the change in the labor controls approach of the Korean government in the 1990s.[3] While

[3] In Korea, a political transition took place in the late 1980s, and then was followed by economic liberalization toward a market-oriented economy in the 1990s. In this sense, the model of dual transition Bermeo (1994) suggests seems to be less suited to the Korean case since political transition occurred prior to economic liberalization. In the period of post 1987-democratization, democratization involved the peaceful transfer of power from a military to a civil government in 1993 and coincided with strengthened trends toward a market economy instead of government-led one. Nonetheless, it is ambiguous if there is simultaneity and causality between the transition both in politics and in the economy in Korea. The debate is beyond the scope of this study. Rather, this study places an emphasis on the idea that the government

globalized world economy intensified international competition in the 1990s, the increasing domestic wages, caused by growing union bargaining power, eroded the competitive advantage low labor costs gave Korean companies (Kwon and O'Donnell, 1999). Simultaneously, the past strategies of direct authoritarian repression were no longer effective as democratization increased the political cost of the authoritarian approach vis-à-vis organized labor (Roh, 1995). In order to cope with intensified competition and growing wage costs, the government searched for an alternative labor control policy based on market mechanisms. The Korean government initiated far-reaching industrial restructuring towards a market-oriented economy instead of a traditional government-led economy attempting to control organized labor through labor market deregulation toward flexibility in order both to compress wage increase[4] and to support the managerial flexibility of employers. The labor market deregulation was aimed at removing the bargaining power of unions by rolling back traditional protectionist labor market institutions such as strict restrictions on layoffs. In recent times, IMF-intervention, which was caused by the Asian currency crisis in 1997, has brought neo-liberalism to the Korean labor market, which has further threatened Korean unions (Block, Lee, and Shin, 2000).

Korean Unionism and Government's Labor Controls

The changes in industrial relations raise questions about causality between declining unionism and shifts in governmental controls vis-à-vis organized labor. Much attention has been paid to unionism or union bargaining power since the 1987

used market-mechanisms as a tool to control organized labor. For further discussion of the dual transition model, see Bermeo (1994), Przeworski (1991), and Whitehead (1989).

[4] The wages in manufacturing increased fivefold between 1982-84 and 1994-96 (the Bank of Korea, 1997).

democratization in Korea. It is generally accepted that Korean independent unionism steadily declined in the 1990s.[5] Despite dramatic evolution with political democratization in the late 1980s, the proportion of workers who belong to unions has steadily decreased, and industrial actions also fell steeply in the 1990s. For example, union density fell from 18.6 percent in 1989 to 11.5 percent in 1998, and labor disputes decreased from 1,616 to 129 incidents in the same period (KLI, 2000).[6] Some Korean scholars have diagnosed this phenomenon as unionism-in-crisis (Park, 1992; Kim, 1995; Kim, 1997).[7]

Some influential studies have linked the main causes of declining unionism to the exclusionary labor controls of the government (Choi, 1989; Song, 1991; Lim and Kim, 1991; Kim, 1995). For example, Choi (1989, 1997) argues that exclusionary state-corporatist controls of the government caused the failure of the Korean unions. In contrast, Song (1991) stresses that the government employed market-mechanism controls to remove the economic power of unions as a bargaining agent, arguing that atomized enterprise unionism with dismal bargaining power was a key result of the market-mechanism controls. Although these pioneering works have helped to illuminate the structure of political constraints against organized labor, they lack empirical foundation about causality between government controls and union bargaining power, which is not predetermined, but an empirical issue.

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[5] The decline in unionism seems to be a worldwide phenomenon since the 1980s. Union membership has steadily declined across countries, centralized systems of wage-setting are breaking apart, and the collective power of unions has decreased (Wallerstein and Western, 2000; Ranald, 1999; Slomp, 1996; Turner, 1991). As is well known, varied causes lie at the heart of declining unionism: intensified competition triggered by globalization of the world economy, new advances in technology, work reorganization toward flexibility, shifts in employment structure, consequent flexible labor markets, freer movement of capital in the global economy, and so on (Piore and Sable, 1984; Kern and Schumann, 1984; Freeman and Medoff, 1984; Turner, 1991).

[6] Union density = (union members / wage earners)*100.

[7] With variations in focus, these scholars point to commonly declining union density, decrease of labor disputes, and weak national organization of independent unions as symptoms of a unionism crisis (Kim, 1997:328).

In addition, either the state-corporatist or the market-mechanism controls approach seems to be too reductionist to sufficiently capture the dynamic variations in the governmental labor control strategies at the multi-levels during the 1990s since it places overemphasis on the national labor politics without allowing for the diversity within the control strategies. In other words, it is noteworthy that the Korean government has employed varied control strategies combining inclusive approach at the national level and exclusionary market-oriented approach at the workplace level.[8] In this sense, the current views with national politics orientation seem to be impotent in explaining varied combination of labor controls which have deployed in different ways at the national and workplace level. Thus, it still remains open whether or to extent which the diverse shift in labor control strategies impacted the union bargaining power in Korea.

Primary Objectives and Research Questions

This study empirically examines a causal relation between union bargaining power and the labor controls of the government in Korea from 1987 to 1999.

First, a primary objective is to empirically scrutinize the current view of unionism-in-crisis which lacks sufficient empirical foundation. Despite widespread skeptical perceptions of Korean unionism, the term of "crisis" or "decline" of unionism is ambiguous. In what sense are the Korean unions in crisis? Are the above descriptive indicators of union membership and labor disputes sufficient to conclude decline of union strength? Although descriptive indicators such as union membership and incidence of

[8] For example, inclusive approaches may involves the varied experiments with social pacts through the NCES in 1990, national wage bargaining in 1993-94, the IRRC in 1996-97, and the "Tripartite Committee" in 1998-99. Although these experiments were criticized by Korean academia due to the inherent limitations and imperfect implementation, they were the first meaningful steps toward more advances in the Korean industrial relations. For detailed discussion, see Chapter II.

labor disputes partly reflect union bargaining power, these indicators are not sufficient to sustain the current unionism-in-crisis view due to their own inherent limits. For example, union density is often not a strong criterion for union strength (Wilkinson and Burkitt, 1973), and so it should be complemented by other important indicators such as density in key areas of economic activities (Valenzuela, 1989).[9] Further, as a high rate of labor dispute does not necessarily express strong bargaining power (Kim, 1995:57), so does a reduction of industrial strike not always assert union decline. As Korpi and Shalev (1979) state, visible conflict between the two conflicting parties is less likely to occur when power relations between them are extremely unbalanced. Rather, settlement without industrial actions conversely indicates the high bargaining power associated with a strong labor movement (Kim, 1995).

This study suggests the effect of unionism on wage as an alternative important criterion of the substantial bargaining power of Korean unions. In general, the union/nonunion wage differential has often been used as a measure of union power since this differential is positively correlated with union strength (Booth, 1995:157; Layard et al., 1978; Nickell and Andrews, 1983; Layard and Nickell, 1985,1986). This approach is consistent with the classical view of unions both as associations seeking the economic well-being of members (Webbs, 1911; Commons, 1936) and as mass organizations that respond to members' wishes (Block, 1980).

In particular, the union wage effect is a central criterion for the "substantial" bargaining power of unions in Korea. The reasons are several fold: (1) wage is at the heart of the desires of the Korean working class as they were discriminated by low wage

[9] Valenzuela (1989) argues that union density in the "key industry or area" of economic activity (e.g. Chile's copper industry and the unionization levels of Sao Paulo in Brazil) is more important than overall union density in explaining union strength.

policies concomitant to the export-oriented industrialization (Song, 1991; Erickson and Kuruvillar, 1998); (2) Korean workers' desire for higher wages crystallizes the political and social discontent of the Korean working class.[10] As the low wages of the pre-democratization period resulted from the political suppression of authoritarian regimes, the exploding wage struggle in the post-democratization period was another manifestation of political and social discontent and resistance; (3) Given fewer institutional devices for unions' collective voice for social and political issues in terms of Freeman and Medoff's (1984) in Korea, the Korean unions concentrated on wage bargaining. Annual wage bargaining composes the largest share of unions' activities in Korea (Kim, 1995) so that union strength has been manifested in the achievement of wage bargaining; (4) Long-standing tight labor market conditions were favorable for wage-maximization strategies for unions. Owing to protectionist employment laws and practices and/or an expansionary economy, the unemployment rate was less than 3 percent until the recent IMF crisis. As Reder (1988) argues, tight labor markets insulate unions from the threat of trade-off between wage and employment, costing down the unions' wage maximization strategy. Accordingly, the wage effect of unions reflects their bargaining power.

Second, based on the study of union wage effects, this study explores the empirical causality between union bargaining power and the labor controls of the government. It both provides an empirical foundation for the current debate over governmental labor controls and extends the debate to the recent Kim Dae-joong government. Noting the diversity in the ongoing control strategies, I will investigate the

[10] In his motivational analysis, Kornhauser (1954) argues that demands for wage increase may involve crystallized social and political discontents.

different impacts of each control strategy on union bargaining power. In addition, with these questions, this research challenges the reductionist dichotomy of current competing views of state-corporatist versus market-mechanism controls in Korea.

Structure of This Study

This study consists of six chapters. In order to address the research agenda, it works from theoretical consideration to empirical measurement. Chapter I first reviews theories of bargaining power and the labor control policies of the government, which indicates a correlation between union strength and the labor controls of the government in Korean industrial relations. Chapter II begins with a brief historical overview of Korean industrial relations. It explains recent changes in the Korean industrial relations in relations to the labor controls of the government and market situations. Discussing the methodological shortcomings of prior studies, Chapter III specifies econometric models with both aggregate panel and micro data analysis. The empirical models allow for endogeneity issues (i.e., simultaneity and selection), applying both logistic transformation (Voos and Mishell, 1986) and a treatment effect model (Maddala, 1986; Greene, 1997). Chapter IV analyzes and discusses the empirical outcomes focusing on the causal relationship between union bargaining power and the labor controls of the government. Chapter V stresses implications of this empirical study for Korean industrial relations, and the last chapter summarizes and concludes this research with the limitations.

CHAPTER ONE

THEORETICAL CONSIDERATION:

LABOR CONTROLS OF GOVERNMENT AND UNION BARGAINING POWER

1.1 Introduction

This chapter reviews theories related to labor control strategies of the government and union bargaining power[11]. Capitalist states are motivated to control organized labor to maintain and facilitate stable capital-accumulation (Burawoy, 1985; Kim, 1995), on the one hand. Unions respond to such controls with bargaining power in order to protect and improve the socio-economic status of organized labor, on the other hand. Correspondently, the relations between the government and organized labor unfold in a complex manner in the politics of industrial relations according to the diversity of labor control strategy and union strength.

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[11] With focus on the effect of labor controls on union bargaining power, this study primarily concerns the relations between organized labor and the government rather than labor-management relations. It does not mean that the labor-management relations are not important in Korea. In fact, the Korean management, which was a sub-partner without hegemony to the government in industrial relations (Choi, 1989), has gained relative autonomy from the government since the mid 1990s as the government initiated to shift toward market-oriented economy. For example, so-called 'new managerial strategy' facilitated by Chaebols was an aggressive attempt both to enhance competitiveness and to gain managerial control power over growing independent unions at the workplace level (Chang, 1999); Chaebols began to transplant production facilities either to other domestic locations or overseas to China, Indonesia and Vietnam in order to weaken the power of independent unions (Kwon and O'Donnell, 1999; Lee, 1994); the past paternalistic management practices such as company welfare schemes and seniority-based payment system was replaced with performance-based compensation, flexible work organization, and personal practice introducing competition. Nonetheless, union-government relations are at the heart of Korean industrial relations. The Korean government has played a central role to discipline organized labor both for economic growth and for political stability. Simultaneously, the labor controls of the government empowered employers to gain managerial controls over organized labor in workplace industrial relations. In a sense, the interests of Korean employers in industrial relations seem to be represented by the government with the similar interests for steady growth of the national economy. Correspondently, a key to understand Korean industrial relations including workplace industrial relations is to examine first the union-government relations. To consider that the relationship between the government and unions is at the heart of Korean unionism, this study stresses the relations between the union bargaining power and ongoing shifts in labor controls of the government.

This chapter consists of two parts: first, this section reviews theoretical considerations of the labor control strategies in authoritarian regimes in association with the union bargaining power; second, the conceptual debate on union bargaining power will be discussed with a focus on the dynamism of bargaining power, involving an empirical issue of how to measure the union bargaining power.

1.2 Labor Controls of Government

It has been a controversial issue how the government strategically responds to the organized labor especially in East Asia and Latin America (Deyo, 1987,1989; Valenzuela, 1989; Choi, 1997; Song, 1991; Roh, 1995). In broad terms, the government's strategy vis-à-vis organized labor may originate in the nature of the capitalist state, but this is beyond the scope of this study. Rather, I emphasize the debate over labor control strategies which the governments in these areas have employed in the course of industrialization.

This debate revolves around the question of how authoritarian governments can effectively repress the resistance of organized labor concomitant to rapid industrialization. It is a well known fact that the Asian NICs achieved dramatic economic success through the EOI (Export-Oriented Industrialization), a strategy which is rooted in achieving a competitive advantage through a market-clearing wage (Deyo, 1987,1989; Amsden, 1989; Valenzuela, 1989; Choi, 1997; Kim, 1997). In order to gain the competitive advantage of low labor cost, the government directly controlled the price of labor through repressive wage policies such as wage-guidelines, while undermining the bargaining power of unions.

In contrast, the populist authoritarian governments in Latin America employed the ISI (Import-Substitution Industrialization) to overcome what Malloy (1977:5) calls "delayed dependent development." The ISI needs domestic consumption on the demand side to maintain a stable reproduction circle. Accordingly, it was not unusal for the government to allow high level of wages to accrue to the unionized sector because high income is directly linked to high domestic consumption, which provides the fundamental foundation for the success of ISI.[12] In addition, the government's accommodation of high earnings for the unions functioned as an inducement for political subordination.

Despite the difference in development strategies, those governments employed a strategy of effective "economic mobilization" and "political demobilization" of organized labor in pursuit of both economic growth and political stability. Economic growth attained stable reproduction of capitalist accumulation, providing political stability which, in turn, further engenders economic growth.[13]

Some classic collections (e.g. Collier and Collier, 1979; Deyo, 1989; Valenzuela, 1989) provide a framework to understand the labor control strategies employed by authoritarian governments. Based on the historical facts in Latin America, Valenzuela (1989:448) suggests two forms of containment strategies used by authoritarian states: the state-corporatist strategy and the market mechanism repression. In the former, the

[12] In contrast, Korean economy relied on 'foreign consumption' in the international markets mainly because domestic markets did not develop sufficiently to create the supply. In other words, the Korean products were consumed by other countries in the international market, and thus the government had no incentive to accommodate high level of wage to facilitate domestic consumption (Kim, 1997). Rather, it had a need to depress the price of labor in order to keep price-competitiveness in the international market to maintain a stable foreign consumption of the Korean products (Kim, 1997). This difference in the economic strategy is partly attributed to the different approaches of the governments vis-à-vis organized labor. See Kim Hyung-ki (1997) for the detail.

[13] In particular, it provides stability to the authoritarian government that had very weak legitimacy in Korea during the developmentalist period (see Choi, 1997).

government subordinates organized labor to its authority by co-opting the leadership of unions. It is characterized by two features: (1) unions are hierarchically organized as a subordinated "associational body" in a top-down manner by the government; (2) unions gain organizational/material resources from the government in exchange for political subordination (Valenzuela, 1989). These control strategies were particularly well developed in Latin America. For example, in Brazil, Vargas's government (1930-1945) initiated the labor policies designed to subjugate organized labor to the government. The government tolerated only the union election that placed pro-government candidates in union office, while labor tribunals had deciding voice in the resolution of labor disputes (Williams and Wright, 1975; Alves, 1973). In Argentina, Peron government (1946-1955) co-opted unions under its controls by protecting them by organizational security and financial aid (Martin, 1989).

In the latter strategy, the government relies on market mechanisms to repress unions. These mechanisms weaken the economic roles of unions as "bargaining agents" to intervene into wage determination, to a maximum extent, by decentralizing collective bargaining, restricting strikes especially in strategic industrial sectors, and facilitating plural unionism to delay powerful centralized unionism. Formal bargaining rights and other powers granted to unions have little economic impact as these restrictions render them ineffective unless their respective labor markets are tight (Valenzuela, 1989: 448). Song (1991:312) finds that, with the exception of Singapore,[14] Asian NICs have employed market mechanism controls.

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[14] Singapore government actively integrated union movement under its authorities and controls through government-dominant arrangement (e.g. NWC) in order both to substitute for disruptive communist unions and to attract foreign direct investment for economic growth (Begin, 1995; Anantaraman, 1990; Deyo, 1989). For example, the PAP (People's Action Party) government incorporated the National Trade Union

Although authoritarian regimes tend to employ primarily one or the other strategy of labor containment, mixed forms are not unusual. Valenzuela (1989) writes,

> "*Regimes with corporatist approaches may tolerate union formation at the margins of legality in the stronger industries, where workers' bargaining clout is greater and where the official unions and their leaders have little capacity to gain even minimal worker allegiance. Regimes with a market approach may nonetheless sponsor union organizations in certain sectors, generally ones which they choose to favor*" (Valenzuela, 1989:448).

Noting the diverse power relations between the government and organized labor in Latin America, Collier and Collier (1979) emphasize the "inducement and constraints" of the government. Labor organizations and leaders are constrained by direct government controls. Simultaneously, the governments also provide benefits such as official recognition, monopoly of representation, compulsory membership, and the subsidy of the groups, which function as an inducement through which the power elite motivates organized labor to support the state, cooperate with its goals, and accept the constraints imposed by the government (Collier and Collier, 1979). In this context, authoritarian corporatism is maintained through the interplay between inducements and constraints (Collier and Collier, 1979:969).

There are two competing applied views surrounding the nature of labor control strategy of the Korean government. Based on Schmitter's (1979) state-corporatism, Choi (1997) applies the notion of state-corporatist approach to the labor control of the authoritarian government in Korea. He concludes that the Korean government's labor control before 1980s was very similar to "exclusionary" state-corporatist control (Choi, 1997:338) in that (1) monopoly of interest representation was underwritten through

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Congress (NTUC) within the National Wages Council (NWC) for the successful incomes policies (Anantaraman, 1990).

official recognition by the government (e.g., provision of ban on plural unionism – i.e., only one union can be legally recognized in a industry or occupation), and at the national level, the FKTU has been recognized as the only official peak organization, (2) the qualification and the number of union officials were limited, (3) subsidies were granted, (4) political activities of unions were prohibited, and (5) the internal affairs of unions were subject to bureaucratic control. In particular, the government attempted to depoliticize organized labor through fewer 'constraints' and more 'inducements' (Choi, 1997:339). Moreover, such control has continued even in the post-democratization era in a form of loose state-corporatist control (Choi, 1997a).

On the other hand, Song (1991) suggests an opposing view that repression occurred by market mechanisms. Compared to Brazil and Mexico, there was no quid pro quo such as a high "union wage" for political subordination in Korea (Song, 1991:327), while both prohibition on political activities of unions and bureaucratic control produced decentralized, atomized enterprise unionism. In particular, the ban on intervention of the third parties into labor-management relations excluded opportunities for even the upper level federation or confederation to support local member unions so that decentralization in collective bargaining was bolstered (Song, 1991:329). The Korean power elites politically demobilized organized labor rather than attempting to gain political support from the working class through inducements during the period of authoritarianism (Im, 1998:338).

These pioneering studies contribute to understanding the structural political constraints on the politics of industrial relation between the government and the labor in Korea. They leave several issues open, however: First, both the state-corporatist and

market-mechanism controls are too static and reductionist to capture the "dynamic variation" of the shifting strategies undertaken by the government during the 1990s. An overemphasis on "macro-controls" at the national industrial relations level overlooks changes in the government' strategy on the sub-levels. Indeed, national level industrial relations diverge from workplace/functional industrial relations, even if these are mutually related. The former mainly relates to national labor politics stressing macro-framework governing industrial rules, while the latter is the functional relations surrounding collective bargaining and employee involvement at the workplace. In the Korean case, the authoritarian government deeply intervened into all the level of politics of industrial relations with containment strategies in the pre-democratization period. Such strategies not only repressively de-politicized the unions at the national level but also deprived them of freedom to organization and bargain at the functional level. "Consistent" repression was uniformly applied to all the levels.

This intervention pattern changed, however, as authoritarianism was challenged by the political transition to democracy in 1987 and economic transformation in the 1990s. In particular, because democratization raised the political costs of such repressive intervention into functional industrial relations, and the dramatic evolution of independent unionism made it, to some degree, impossible (Kim June, 1995), the government backed away from direct intervention into functional and workplace industrial relations, allowing limited autonomous bipartism. Further, as the size and complexity of the Korean economy increased, the government-led economy began to reveal its limitations (Jang, 2000). Interventionist industrial policies were unable to achieve the former economic gains, and the government moved toward establishing a

market-oriented economy, stepping back from direct involvement in workplace industrial relations during the 1990s. As a result, both the new political climate and the inconsistency of the government-led economy in the changing environment led to rapid evolution of union roles at the functional level of industrial relations.

It is worthy to note "discontinuity" in linkage between national labor politics and functional industrial relations in the post-democratization period. At a functional level, direct repression was steadily being replaced with market mechanisms, which allowed autonomous collective bargaining for organized labor. At a national level, the government sustained political repression against independent unionism in order to continuously preempt the "national political market" (Choi, 1997). Simultaneously, in order to incorporate a part of organized labor, it attempted various "social pacts" through the IRRC (Industrial Relations Reform Committee) and the Tripartite Committee at the phase of industrial relation reform during the mid 1990s.

From this view, the strategic variance in the shifting labor controls characterizes a "mixed regime" in Valenzuela's (1989) terms, in that (1) the direct intervention into functional (or workplace level) industrial relations was weakened, and instead, market forces governed the labor-management relations at these levels, and (2) political constraints on unions at the national level shifted from the indiscriminate repression vis-à-vis organized labor towards limited incorporation as suggested by the state-corporatist approaches. Correspondingly, the existing views based on the dichotomy of 'state-corporatist versus market-mechanism controls' are unable to capture dynamic "strategical mixture" at the functional and national industrial relations level. These views are, in the

end, anecdotal, lacking a robust empirical foundation so that their conceptual illustrations have potential but no verified hypotheses.[15]

1.3 Unions and Bargaining Power

Conventional Approaches to Bargaining Power

Union bargaining power has been investigated extensively by IRists[16] and labor economists. The literature has focused on conceptual formations based on economic aspects (e.g., Marshall, 1920; Dunlop, 1944; Chamberlain and Kuhn, 1965). Katz and Kochan (1992: 88) define bargaining power as the ability of one party to achieve its goals in bargaining in the presence of opposition by another party to the process. Chamberlain and Kuhn (1965) view the power as the ability to secure an agreement on one's own terms emphasizing the costs of agreeing (or disagreeing).[17] In the same vein, Dunlop (1944:78) emphasizes wages as a key goal of collective bargaining, claiming that bargaining power is the relative ability of two contracting parties to influence the wage, in the light of all prevailing factors. In broader terms, Lindblom (1948: 402-3) maintains that bargaining power is best defined in a way that includes all the forces which enable a buyer or a seller to set or maintain a price.

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[15] These theoretical frameworks should be identified in a manner that combines historical facts with empirical evidence.

[16] IRist refers to the scholars in the field of industrial relations. I use this term to stress the fact that industrial relations as an independent discipline have developed both in theory and in practice especially since the early 1990s. It is an attempt to identify the scholars and practitioners in the field of industrial relations from other fields involving labor economics as well as human resource management.

[17] In other words, a party's power increases as the cost of disagreeing with an opponent decreases (Leap and Grigsby, 1986). This concept was accepted by Slichter (1940). He formulates bargaining power as the cost to 'A' of imposing a loss upon 'B'. In terms of bargaining power, "costs" seems to be a core notion that are incurred by or imposed upon one side or the other. Chamberlain and Kuhn (1965:182) categorize these costs as direct costs of concession (e.g. wages gained or lost), secondary costs of concession (effects of pattern bargaining), and "non-market" costs of concession ("matters of principles").

What are the sources of bargaining power? Two different perspectives provide a foundation for the determinants of bargaining power. Neo-classical approaches place a priority on the elasticity of labor demand as a key determinant of bargaining power. Marshall (1920) notes inelasticity of labor demand as a central determinant suggesting four basic conditions of inelastic labor demand in terms of the trade-off between wage and employment[18]. Institutionalists[19] extend the notion to comprehensive influences that involve taste, motives, skills in techniques of persuasion and coercion (Lindblom, 1948), and negotiation levels (Scheuch, 1981; Fossum, 1982). With attention to institutional effects, Western (1997) and Wallerstein and Western (2000) suggest that union concentration and the centralization of wage setting are associated with union strength.

Despite fundamental contributions, both approaches ignore a key factor, the political aspect of bargaining power, which is often a central determinant in developing countries. The literature of political economics evidences historically and empirically that transformations of political regimes, the presence of labor parties, and labor control strategies of the government affect union bargaining power. For example, the political transition from authoritarianism to democracy was a critical context for the evolution of unionism in many countries. In the Spanish case, with the breakdown of the Francoist dictatorship in 1976, democratization expanded the legal and political strength of Spanish unionism (Lucio, 1992; Valverde, 1991).[20] The fall of the Greek military

[18] Four factors are (1) substitution of labor for other production factor when labor cannot be easily replaced in the production process by other workers or other capital, (2) when the demand for the final product is price inelastic, (3) when the supply of non-labor factors of production is price inelastic, and (4) when the ratio of labor costs to total costs is small.

[19] An institutional approach also recognizes the importance of the product and labor market constraints (Scheuch, 1981; Fossum, 1982).

[20] The political transition in Spain launched significant the legal and political base for unionism. With the recognition of freedom of association and the right to strike in the 1978 Constitution, unions could gain the status or legal position of social partners (Valverde, 1991).

government in 1974 also resulted in independent unionism which replaced the official government-sponsored unions (Kritsantonis, 1992).[21] In the same vein, the development of the Korean labor movement in the late 1980s and the early 1990s was mainly caused by political democratization (Cho, 1995). As regards political parties in association with union strength, Misra and Hicks (1994) empirically verify that political parties with affinities toward organized labor are positively associated with union strength.[22] On extension of political regime debates, labor controls of the government have also been a central issue in investigating union strength. It is generally accepted that the authoritarian rule of the Korean government is negatively associated with union bargaining power. As noted, Choi (1997) introduces a state-corporatist framework to explain the structure of political repression vis-à-vis organized labor. Roh (1995) argues that declining bargaining power in the early 1990s is attributed to "exclusionary control based on hegemony."[23] The structure of labor control regimes is a primary interest, and the nesx section will discuss this more intensively.

Dynamics of Bargaining Power: Strategic Goals and Politico-Economic Context

To synthesize the above conceptual notions, we may define union bargaining power as the extent to which unions are able to achieve strategic goals (e.g., Kochan and Katz, 1992; Dunlop, 1944) through interaction within the politics of industrial relations

[21] Krisantonis (1992) maintains that the most important novelty in unionism aftermath the downfall of Greek authoritarianism is the rise of factory organization, independently of the official GSEE (Greek General Confederation of Labor) structure.

[22] Misra and Hicks (1994) also argue that culture, that is, Catholicism, is a strong determinant to associate the Christian Democratic Party with organized labor.

[23] Roh (1995, 1997) emphasizes that the authoritarian government was limited to enforce direct, physical repression due to the transformation to democracy, and as a result, the importance of legal and ideological controls increased. He calls it "hegemonic control" (Roh, 1997: 134).

under the politico-economic constraint. As conventionally viewed, the strategic goals unions seek are wage increases and job security, which constitute basic key utilities of unions as a labor market institution and political association (Dunlop, 1944; Freeman and Medoff, 1984). Freeman and Medoff (1984) state that one of the key roles of unions is that of a "collective voice" to represent the economic interests of their members. Of the economic interests, wage raise and job security are important concerns for union members, and as a result, unions tend to mobilize more resources for collective bargaining over wages and employment security.

Unions' ability to maximize strategic goals depends on market conditions and the political context; the former, a general aspect, relates to the market power of unions as a labor market institution, and the latter is often a central constraint for the union to play the role of an industrial actor in the politics of industrial relations.

First, as Marshallian conditions imply, the elasticity of the demand for labor inherently determines the market power of unions. The market power is the influence of unions as a labor market institution, that is, a monopolist supplier of labor, in the labor market. It forms a foundation of union strength through market processes in the production and the labor market. In general, the inelasticity of the demand for unionized labor empowers unions at the bargaining table because it limits employers' ability to substitute nonunionized labor. The greater the union coverage is, the lower the elasticity of demand for the product of unionized firms will be and, as a consequence, the lower the elasticity of derived demand for labor will be (Freeman and Medoff, 1981). Therefore, union density becomes an determinant for union strength.

Labor market conditions influence union market power by a tradeoff between wage and employment.[24] Dunlop's (1944) seminal work characterizes unions as an agency setting the wage rate to satisfy some objective, while employers respond by determining employment according to the industry's labor demand function (cited in MaCurdy and Pencavel, 1986).[25] A tight labor market improves the status of unions as a labor price-setter through mediating the tradeoff (Reder, 1988). For example, unions may maximize wage increases without sacrificing job security under a tight labor market. On the other hand, high unemployment weakens unions' ability to determine wages due to a rich pool of reserved labor.

Second, political constraints restrict unions as a key actor in the politics of industrial relations at the workplace and at the national level, a phenomenon that is often found in authoritarian regimes. As are often the cases of Asian NICs and Latin America, authoritarian governments attempted to delay evolution of powerful unionism through political coercion and institutional constraints such as limiting freedom to association and to bargain autonomously, banning industrial action within strategic industrial sectors, granting much discretionary authority to the government to intervene into union affairs, and exercising political repression (Deyo, 1987, 1989; Valenzuela, 1989; Choi, 1997; Song, 1991).

Consistent with this concern, powerful unionism began to evolve alongside the political transformation toward democracy in these areas (Cho, 1995). In the Korean

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[24] The conventional view – a monopolist (union) setting prices and a buyer (employer) reading off his quantities to be purchased from his demand curve – suggests a trade-off in the relationship between wage and employment.

[25] Dunlop suggests the wage bill as the relevant objective for the union in many circumstances, and it was Fellner (1947) and Cartter (1959) who generalized this to an ordinal objective function involving the wage rate and employment.

case, political democratization opened legal and political space for independent unions to dramatically evolve as a substantial actor in the politics of industrial relations.[26] With respect to political constraints, this study mainly concerns the labor control strategies of the government which have a central determining effect on union bargaining power in the Korean setting.

How to Measure Union Bargaining Power: Strategic Goals and Union Wage Effect

Then how can we quantitatively measure union bargaining power? While a body of rich conceptual and theoretical research addresses this question, there are few empirical studies on bargaining power. Some students attempted to measure union bargaining power by union membership (Willkinson and Burkitt, 1973; Lukes, 1974; Bean, 1994). More recently, ILO (1997) constructed a labor strength index with four factors including membership, bargaining structure, and the number of major ILO conventions ratified.[27]

Although these indicators can be useful measurement tools for union strength, they are too general and descriptive to provide a sufficient base for empirical study. Many point out the limitation of union membership as a sufficient indicator (Willkinson and Burkitt, 1973; Lukes, 1974; Valenzuela, 1989; Bean, 1994). For example, Valenzuela (1989) emphasizes the importance of union density in the "key industry or area" of

[26] The evolution of independent unionism directly means the restoration of union's normal function and bargaining power which was totally dismantled by Korean authoritarian regimes (for example, Deyo, 1987, 1989; Choi, 1997; Song, 1991; Lim, 1997).

[27] Four factors are (1) union members as proportion of the non-agricultural labor force, (2) proportion of formal-sector workers covered by collective agreements, (3) the dominant level of collective bargaining (e.g. national or sectoral bargaining/ company or plant bargaining), and (4) the number of major ILO conventions ratified (ILO, 1997).

economic activity rather than overall union density; in Valenzuela's study, Chile's copper industry and the unionization levels of Sao Paulo in Brazil. Moreover, the ILO indexes are not free from the critique of "overgeneralization" as they lack diverse country-specific effects – e.g., institutional effects – on those factors. For example, wide collective agreement coverage may be an outcome of institutions, not a direct reflection of strong unionism, in most European countries.

Noting that the outcomes of the Korean unions' strategic choice are a reflection of union bargaining power, this study uses union wage effect as a key criterion of bargaining power. In general, the union/nonunion wage differential has often been used as a measure of union power (Booth, 1995:157). Macroeconomic models and aggregate labor market models commonly use it for this purpose, since this differential is positively correlated with union power (Layard et al., 1978; Nickell and Andrews, 1983; Layard and Nickell, 1985,1986). This perspective is consistent with the classical perception of unions; the primary objective of union is to improve the economic well-being of their members (e.g., Webbs, 1911; Commons, 1936),[28] and thus union wage premiums become a critical outcome of the union reflecting their bargaining power. In addition, unions are a democratic mass-organization. The leadership must be responsive to the wishes (and/or discontent) of the membership to remain in office (Block, 1980:104). Accordingly, unions tend to mobilize much lager portions of their resource to collective bargaining to satisfy workers' wishes regarding wages.

[28] The Webbs (1981, 1911) stressed the role of unions as a means of extending representative democracy in the industrial system, and collective bargaining symbolized the industrial democracy since employers and unions participated as equals in the determination of the terms and conditions of employment. Commons (1936) viewed unions had originated as defensive mechanisms against low-wage competition in a widening market (Burtt, 1963)

In particular, the union wage effect is a central criterion for the "substantial" bargaining power of unions in Korea. The reasons are several-fold. First, wage is at the heart of the desires the Korean working class have as they were discriminated against by low wage policies concomitant to the export-oriented industrialization (Erickson and Kuruvillar, 1998).

Second, it is important to understand that "wages" in Korea implies something beyond simple economic terms. Rather, the desire for higher wage crystallizes the political and social discontent of the Korean working class.[29] As the low wages of the pre-democratization period resulted from the political suppression of authoritarian regimes, the exploding wage struggle in the post-democratization period was another manifestation of political and social discontents and resistance. In addition, employees' desires and discontent had accrued to the wage issue for much of the developmentalist period, as described before. In this sense, the wage issue was not only economic but also political; a primary goal of the government's repression against the working class was to constrain the wage in the interest of stable economic growth through the whole period of industrialization. Correspondingly, working class resistance emerged as explosive demands for wage increases during the easing back of authoritarianism.

Third, given fewer institutional devices in Korea for unions' collective voice for social and political issues in Freeman and Medoff's (1984) terms, the Korean unions were forced to concentrate on wage bargaining. Annual wage bargaining composes the largest share of unions' activities in Korea (Kim, 1995) so that union strength has been manifested in the achievement of wage bargaining.

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[29] In his motivational analysis, Kornhauser (1954) argues that demands for wage increases may involve crystallized social and political discontent.

Fourth, labor market conditions were favorable for wage-maximization strategies for unions. Throughout much of the post-democratization period until the IMF-crisis in Korea, labor markets were tight enough to favor unions' wage maximization strategies. Owing to protectionist employment laws and practices and/or the expansionary economy, the unemployment rate was less than 3 percent for 13 years, as shown in Table 1.1.

Table 1.1. Trends of Wage and Unemployment in Korea

		'87	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99
Wage	Real	6.9	14.5	9.4	7.5	8.4	7.0	6.1	6.4	6.6	2.4	- 9.3	11.1
	Money	10.1	21.1	18.8	17.5	15.2	12.2	12.7	11.2	11.9	7.0	- 2.5	12.1
Unemployment		3.1	2.6	2.4	2.3	2.4	2.8	2.4	2.0	2.0	2.6	6.8	6.3

(Source: KLI Labor Statistics, each year; unit=percent)

Tight labor markets insulate unions from the threat of a trade-off between wage and employment, decreasing the cost of the unions' wage maximization strategy. Accordingly, the wage effect of unions reflects its bargaining power.

CHAPTER TWO

UNIONS, MACRO ECONOMY, AND LABOR CONTROLS OF GOVERNMENT FROM 1987 TO 1999 IN KOREA

2.1 Introduction

The theories we have reviewed imply that union bargaining power is a function of both the market situation and the government control. The market situation not only determines the boundary of economic rent to be shared by unions but also influences unions' status in labor market by affecting labor demand. Government control relates directly to institutional restrictions that also affect union bargaining power.

In this vein, this chapter gives an historical overview of Korean unionism with particular attention to the market situation and government controls. An emphasis is placed on the ability of Korean unions to achieve, or fail to achieve, their goals within a range of shifts in governmental labor control strategies and macro-economic contexts during the last dozen years. Both the transition to democratization and the recent Korean currency crisis will be mainly dealt with as key external pressures.

This chapter consists of four sections. The first section briefly explains the history of Korean industrial relations in the pre-democratization period. The second section examines how unions have attained labor market outcomes such as wage and employment in response to the instability of macro-economic conditions. The third section reviews the changes in the government's control strategies during the period

under study and suggests an alternative, integrated view in counterpoint to the current academic debates. The last section summarizes changes in the labor control strategies of the government in association with the system of Korean industrial relations.

2.2 Korean Industrial Relations in the Period of Pre-Democratization

This section briefly overviews the evolution of industrial relations in Korea before the 1987 democratization. Although the history of Korean industrial relations may be dated to the Japanese occupation (1905~45), [30] modern industrial relations began to emerge with modern industrialization in the 1960s. In the period of pre-democratization (1961~87), Korean industrial relations were dominated by authoritarian military governments; governmental interventionism was embedded throughout the industrial relations system, playing a dominant role in production and distribution (for example, Amsden, 1989; Deyo, 1987,1989; Weiss, 1998). The government supported competitive Chaebols, which led to successful economic growth under the financial and political patronage of the government, while suppressing Korean unionism.

The authoritarian industrial relations regime was shaped in the initial stage of industrialization initiated by Park's developmentalist government which came to power through the military coup in 1961. With a first priority on economic growth,[31] Park's

[30] During the colonized period, Korean unions were restrained by the Japanese imperial authorities (Park and Leggett, 1998) so that the labor movement was nationalistic and political-oriented addressing nationalistic issues such as national independence than representing the economic interests of workers (Vogel and Lindauer, 1989). After Word War II, with Korea divided by the occupation forces of the Soviets and the United States, the labor movement in South Korea was split into Junpyung (National Council of Korean Trade Unions), the pro-Communists, and Daehan Nochong (Federation of Korean Trade Union), the anti-Communists. In 1947, the leftist Junpyung was banned by the American Military Government and soon replaced by its rival, Daehan Nochong. See Block et al. (2000) for the details.

[31] Choi (1989) argues that Park's authoritarian government placed more priority on economic growth in order to justify illegal military coup.

government (1961~79) promoted an export-oriented industrialization strategy both by supporting competitive Chaebols and by repressing Korean unionism. Deep intervention of the government and the positive roles of Chaebols in combination with governmental patronage were key aspects of the Korean economy in the initial stages of industrialization (Bamber and Leggett, 1996). For example, the government played the roles of entrepreneur in economic development by planning development, investing in the public sector, and providing the private sector with massive financial support (Lee, 1997). In particular, the government provided multiple forms of support such as subsidies, privileged policy loans,[32] and maintenance of an undervalued currency[33] for the Chaebols. In the 1970s, the government facilitated a HCI (Heavy-Chemical Industries) drive in which large government investments were made in steel, autos, shipbuilding, petrochemicals, and machinery (Stern et al, 1995; Kim, 1997; Block et al., 2000).[34] Through the HCI drive economic policies, Hundai, Samsung, Daewoo, and other notable Chaebols grew to become a big competitive businesses in the international market.

On the other hand, the government took an authoritarian approach to organized labor in order both to maintain low wage policies and to preempt political challenges in the course of industrialization. Export-oriented industrialization was sustained by low labor costs. In order to keep price competitiveness in the international niches, the government depressed wages through direct wage-controls such as wage guidelines

[32] The government controlled banks and encouraged the banks to make favorable loans to Chaebols on the basis of EOI rather than on a business rationale (Woo, 1996; Block et al., 2000).
[33] It reduced the costs of Korean exports and restrictions on imports of foreign merchandise (Block et al., 2000).
[34] These investments were for the export market, as the domestic market could not possibly absorb this level of production (Stern et al., 1995).

(Song, 1991; Kim, 1997). In addition, Korean unionism was politically suppressed and it was even dealt with at the dimension of national security.[35]

First, the freedom to association and the right to bargain were institutionally restrained. For example, unions were required to file with the administration for their establishment, and had to be financially audited by the government (Choi, 1984). They were obliged to affiliate with industrial federations under the FKTU (the Federation of Korean Trade Unions), a government-sponsored national peak organization under the rule of Park's regime (Park and Leggett, 1998). Rival organizations were outlawed and oppressed. The Trade Union Act prohibited unions' political activities, blockading political connections between labor and political parties (Choi, 1989). Labor disputes were considerably restricted at the establishments directly invested by foreigners.

Second, in contrast to the strict containment to collective industrial relations, individual workers partially benefited from the stable employment. Sustained economic growth maintained job security in Korea. Unemployment in Korea dropped from 16.4 percent in 1963 to 3.8 percent in 1986 (Woo, 1996; KLI, 2000) and remained below 5 percent through the 1970s and 1980s. The Chaebols absorbed a large share of the employment. Employment more than doubled from 1963 to 1986, increasing from 8 million to 16.8 million (KLI, 2000). The percentage employed in agriculture declined from 58.5 percent in 1965 to only 16.7 percent in 1991, while, during the same period, the percentage employed in manufacturing rose from 9.4 percent to 26.3 percent (Park and Lee, 1995; Kim, 1995a:217)[36].

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[35] Choi (1984) reveals that the Korean CIA (Central Information Agency) always intervened into labor matters as the labor movement was led by socialistic leaders.

[36] The Chaebols both led economic growth with patronage of the government and had large share of the employment as shown the below table (Kim, 1995).

In addition, institutional protections contributed to sustained job security. For example, employees in firms with five or more workers were covered by the Labor Standards Act (LSA) and were protected from dismissal. Under the vast majority of collective agreements, unless a worker was unable to work for mental and/or physical reasons, or committed a criminal offense, or was given a penalty according to the company's regulations, s/he might not be dismissed (Block et al., 2000). Courts also strictly limited layoff for managerial reasons unless there is no other way of solving the business's problems (Chang, 1999). The LSA also regulated severance pay schemes which required employers to pay one month of salary per service year to fired workers. This system imposed a high cost of dismissal on employers so that it prevented employers from firing workers unnecessarily (Shin, 1995).

In 1980, political liberalization, the so-called "Seoul Spring" followed Park's assassination in 1979. However, the successor, Chun Doo-hwan, came to the power through an illegal military coup and continued a repressive authoritarian rule. Chun's government resolved industrial unionism structures and established a system of enterprise unionism through the Trade Union Act. The government continued to prohibit political activity by unions and locked out "third parties" who were not employed by the enterprises concerned (Choi, 1992; Block et al., 2000). This prohibition on third parties'

Leading Chaebols' Share in Manufacturing Sales and Employment in Korea in 1977-1989

Chaebols	Sales					Employment				
	1977	1981	1985	1987	1989	1977	1981	1985	1987	1989
Top 10	21.1	28.4	30.2	27.9	27	12.5	12.1	11.7	11.6	11.8
Top 30	32	39.7	40.2	36.8	35.2	20.5	19.8	17.6	17	16.6

(Source: Kim, 1995a)

The effect of the Chaebols on employment is larger than the official statistics. As most small and medium-size companies are subcontracted with the Chaebols in Korea, the Chaebols have very large effects on employment.

intervention weakened the local unions' bargaining power by blockading support from outside involving the higher-level labor federations. In addition, industrial strikes were prohibited in the public and defense sectors (Lee, 1992).

Unions protested the repression for the right to organization. Protests in the 1980s led by students and union activists against Chun's authoritarian rules came to a head in June 1987 when the presidential candidate Roh Tae-woo promised political liberalization including direct presidential elections (Park and Leggett, 1998). The political democratization provided the momentum for Korean unionism. Independent unions evolved nationwide and labor disputes, especially demanding high wages, dramatically increased. Unions increased in number from 2,675 in 1986 to 7,883 in 1989, and union density rose from 16.8 to 19.8 percent in the same period (KLI, 2000). Important changes was reflected on the revised industrial relation laws. First, the legal requirements of enterprise union system was removed. Second, employers were obliged to bargain in good faith. Third, interfering with employees' union activities was prohibited as an unfair labor practice (Lee, 1992). The basic principle was that the government was withdrawing from its authoritarian role as an ally of employers and an opponent of labor to become a neutral coordinator within its legal framework, while still being committed to the maintenance of economic growth (Park and Lee, 1994; Woo, 1996).

In sum, the Korean industrial relations system in the period of pre-democratization was an authoritarian regime in which the government economically and politically repressed the Korean working class, while Chaebols were supported to lead economic development. Due to the delayed independent unionism, the fruits of economic growth were redistributed to the working class in the form of job-security, increasing

wages, and other benefits through protectionist institutions, not collective bargaining. In a sense, the authoritarian regime was paternalistic as well as repressive. The authoritarian model was sustained during a time of economic growth allowing the "virtuous cycle" to chain economic growth to trickledown effects to the working class. Since the late 1980s, the political transition to democracy and rapid changes in the economic environment have brought remarkable changes to the Korean industrial relations regime.

The following section describes the changes in the system from democratization to the IMF intervention, stressing the labor market outcomes the union gained in association with macro economic condition and government's labor control strategies.

2.3 Macro Economy and Unions' Labor Market Outcomes

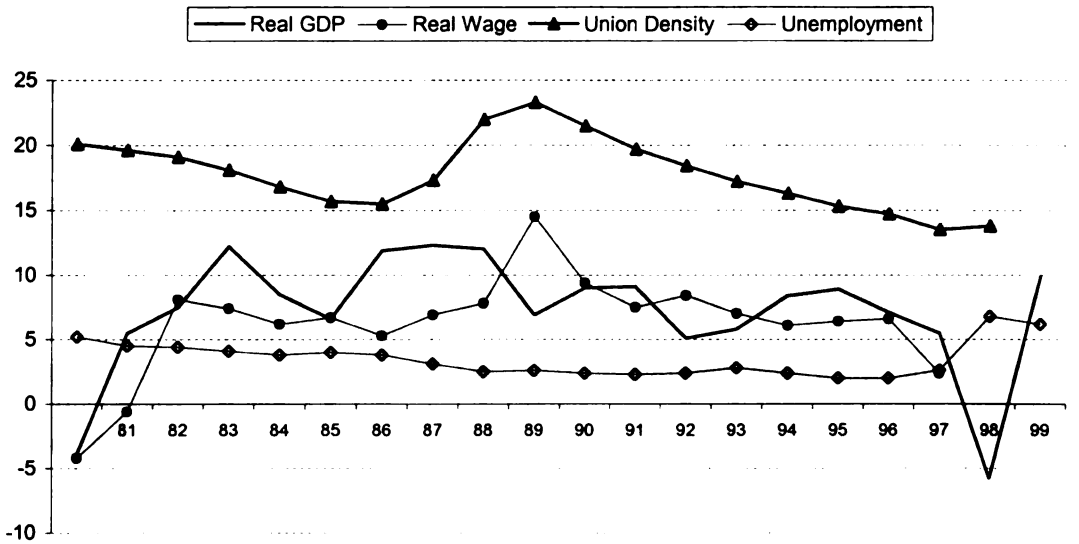
It is well documented that Korea has undergone rapid economic growth since the start of industrialization in the 1960s. Despite the second oil shock and consequent steep recession in the early 1980s, Korea achieved steady rapid growth as well as a low and stable unemployment rate until the currency crisis in 1997. As shown in Figure 2.1, real GDP annually grew 7.1 percent on average through the two decades of 1980-1999 (The Bank of Korea, 1999). Unemployment remained low, 3.4 percent throughout this period, and between 2.0 and 2.8 percent from 1986 to 1996, showing the perfect level of employment[37].

This section provides a descriptive explanation of the labor market outcomes the Korean union gained under the changes in macro economic conditions. It focuses on the

[37] Unemployment rate was as low as might be achieved allowing for frictional unemployment.

period of 1987 through 1999 because the Korean unions began to gain substantial bargaining power after the 1987 democratization.

Figure 2.1. Macro Economic Trends and Labor Market Outcomes



(Source: KLI Labor Statistics, KLI, 2000)

These thirteen years of Korean economic history may be conventionally divided for descriptive purposes into four sub-periods; (1) economic prosperity from 1987 to 1988 (The Bank of Korea, 1988), (2) recession from 1989 to 1993 (Roh, 1995; Kim, 1997; Jung, 1997), (3) partial restoration during 1994-96 (The Bank of Korea, 1994), and (4) economic crisis from late 1997 to 1999.

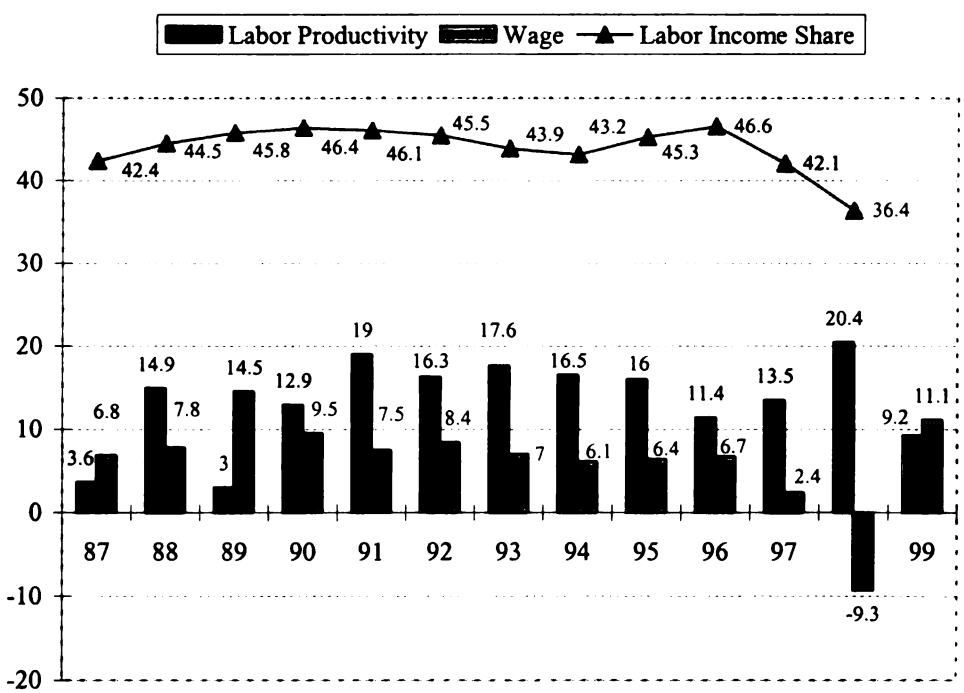
Economic Prosperity: 1987~88

The economic prosperity period is characterized by an unprecedented high rate of growth, more than 11 percent. Prosperity was founded on favorable overseas conditions, the so-called "three-lows" – i.e., low oil prices, low international interest rates, and low Korean Won value (The Bank of Korea, 1987,1988). The three-lows allowed the Korean

economy, with its heavy reliance on export in international niches, to gain a large surplus in the trade balance recording 14.5 billion dollars in 1988 (KLI, 2000).

Real wage increases lagged behind GDP growth throughout this period with real wages increasing by 6.9 percent in 1987 and 7.8 percent in 1988, respectively. Taking into account the remarkable growth, those numbers are not so impressive compared to an average 7.1 percent increase in wages from 1982 to 1985 (The Bank of Korea). This fact may imply that the fruit of unprecedented economic growth was not equally redistributed to the working class, and at the same time, unions were unsuccessful in sharing the economic rent. It is again supported by comparison between labor productivity and labor share in total national incomes as seen in Figure 2.2.

Figure 2.2. Trends of Labor Productivity, Income Share of Labor, and Wage



(Source: KLI (2000), The Bank of Korea, each year)

Contrary to neo-classical theories of wages,[38] real wage growth substantially lagged behind the growth of labor productivity in Korea.[39] Labor productivity increased by 9.8 percent in 1987 and 13.2 percent in 1988, exceeding wage increased during the same period. This is a reminder that economic growth is not always accompanied by escalated wages in a direct manner in Korea. At the same time, the gap between wages and productivity suggests the presence of institutional factors which have a huge influence in income distributions mechanism. Arguably, a central "institutional factor" is the politics of industrial relations among the major actors surrounding income distribution. While growth may expand the "pie of rents," that is, the pool of income available to society, the distribution between labor and capital depends on the bargaining power of unions within the politics of industrial relations. In the same vein, Weeks' (1999) case study on 18 Latin American countries emphasizes the importance of effective bargaining power of labor by arguing that gains of economic growth were not passed on to the Latin American working class due to the lack of union bargaining power.[40]

Economic Recession: 1989 ~ 1993

The second period is from 1989 to 1993. An economic downturn followed the previous expansion as the cyclical recession of the world economy shrank the Korean economy. Responding to the cyclical downturn, the advanced economies returned to

[38] Neo-classical economics asserts that wages are a reflection of marginal productivity.
[39] In practice, the government and the KEF (The Korean Employers Federation), a counterpart to the national labor organization, used to assert that wage increases should be confined to the level of productivity increases in order to mediate the inflation pressure.
[40] Weeks analyzes the changes in the labor market condition from 1970 to 1998 of 18 Latin American countries including Argentina, Bolivia, Brazil, Chile, Mexico, Venezuela, and so on. He argues that most workers in most Latin American countries have not shared in the benefits of economic growth, either in terms of reduced unemployment or rising real wage because of declining unionism in those area (Weeks, 1999).

strict monetary policies and strengthened protectionism, while pushing Korea to liberalize her domestic market (The Bank of Korea, 1989, 1990)[41]. The favorable three-lows disappeared, and retarded export and trade friction hindered sustained growth inducing trade frictions. GDP growth dropped from 11.3 percent in 1988 to 6.4 percent in 1989 (KLI, 2000; The Bank of Korea, 1989). Further, the adoption of strong protectionism by the U.S and the steep appreciation of the Korean Won resulted in negative 4 percent growth in exports. Manufacturing production, the standard-bearer of growth for many years, rose by only 3.7 percent in 1989, one-third the 1988 rate. Although GDP temporarily rose by about 9 percent in 1990-91, helped by brisk domestic consumption and construction investment (The Bank of Korea, 1991,1992), it fell steeply to 5.1 percent in 1992 and 5.8 percent in 1993. Kim and Cho (1999) posit that the Korean economy started a period of a long-run recession in the 1990s, passing through the peak point of the economic cycle in 1988.

Despite the recession, the labor market situations of the working class improved through this period. Real wage increases paralleled those of the earlier period of economic boom. Real wage growth peaked at 14.5 percent in 1989, and wage growth remained between 7 and 9.4 percent during this period. The employment situation was also in good condition as shown by the low level of unemployment, around 2.3~2.8 percent. Labor's share of the national income rose from 44.5 percent in 1989 to 47.4 percent in 1993 (KLI, 1996). The improving position of labor in a period of recession may be, in part, attributed to substantial evolution of unionism.

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[41] The United States began to push market liberalization to Korea in the late 1980s. U.S-Korean Agreement in 1988 ensured the Korean market open to the U.S products such as cigarettes and beef which had been limited to be imported, and thereafter, the U.S had demand more liberalization on steel, auto, telecommunication products and service, threatening retaliatory duties on Korean products through so-called Super 301 in the Omnibus Trade and Competitiveness Act (USTR, 1995).

Partial Restoration: 1994~1997

In the third period (1994-97), the Korean economy escaped severe recession by the partial restoration of international competitiveness. Real GDP grew by 8.4 percent in 1994, 8.9 percent in 1995, and 7.1 percent in 1996 (KLI, 2000). This was primarily attributable to the expansion of exports (The Bank of Korea, 1994). Owing to the business recovery in advanced countries, the rate of increase in exports rose sharply to 16.5 percent in 1994, 24 percent in 1995, and 14.1 percent in 1996 (The Bank of Korea, 1994,1995,1996). The brisk growth in exports was assisted by the appreciation of the Japanese Yen which allowed Korean products to regain relative price-competitiveness with Japanese products in the international niche (The Bank of Korea, 1995). Despite partial recovery, real wage increases fell to 4.8 percent in 1994, 6.2 percent in 1995, and 4.5 percent in 1996, while unemployment remained similar to the previous period. The labor share of national income declined, particularly in the manufacturing sector, from 46.1 percent in 1991 to 43.2 percent in 1994, 45.3 percent in 1995, and 42.1 percent in 1997, with the exception of 1996.

Economic Crisis: late 1997~1999

During the fourth period (late 1997-99), severe economic dislocation coincided with the Asian currency crisis of late 1997. Facing a liquidity crisis, the Korean government requested bailout money from the IMF. The financial crisis has been attributed to several causes such as contagion effects (Sugisaki, 1997), over-deregulation of the government on financial markets (Wade, 1998; Wade and Veneroso, 1998; Chang

et al., 1998), and moral hazards and crony Korean capitalism (Krugman, 1998; Summers, 1998). One of the central causes was the financial market liberalization facilitated by Kim Young-sam government. The government's loss of control over the financial system induced Chaebols to overly invest, relying on international debt. High debt-to-equity ratios essentially render businesses vulnerable, especially in countries such as Korea, small open economies that depend on oversea markets. As the world economy re-entered recession in the mid 1990s, the Chaebols faced a steep decline of profit which, in turn, made them unable to repay their external debt and ignited the liquidity crisis.

The crisis rapidly depressed the entire Korean economy. Real GDP growth recorded a negative 2.7 percent in 1998, which was the first minus growth since 1981. It triggered a series of mass bankruptcies including large-scale firms such as Hanbo, Jinro, Daenong, New Core, and Kia. Among them Kia was the eighth and Hanbo was the fourteenth largest Chaebol (OECD, 1999a, 1999b). As a result, unprecedented mass unemployment emerged in Korea. The unemployment rate tripled to 6.8 percent, the highest record since 1980, and more than 1 million Koreans were unemployed (Ministry of Labor, 1998). Labor's share of income fell to 36.4 percent in 1998 (KLI, 2000).

One year later, the Korean economy recovered fast. Except for unemployment, all macro-economic indicators showed strong improvement in 1990. [42] As external

[42] Major Economic Indicator during Economic Crisis show the fast recovery of the Korean economy.

Year	'96	'97				'98				'99			
Growth (%)	All	1/4	2/4	3/4	4/4	1/4	2/4	3/4	4/4	1/4	2/4	3/4	4/4
GDP	6.8	4.9	6.2	5.5	3.6	-3.6	-7.2	-7.1	-5.3	4.6	9.8	12.3	13.5
Manufacturing	6.8	5.6	7.8	7.9	4.9	-4.6	-10.4	-9.1	-4.7	10.7	20.1	26.8	27.9
Equipment Investment	9.1	4.2	1.3	-12.6	-25.9	-38.3	-46.1	-39.3	-27.4	12.9	37.2	48	-

(Source: The Korean National Statistics Office, each year; Jang, 2000)

vulnerability has been greatly reduced since the onset of the financial crisis through industrial restructuring, GDP growth rate climbed to 9.9 percent (The Bank of Korea, 2000) in one and a half year after the Kim Dae-joong government requested bail-out money from IMF. In addition, as of December 1999, other macro-economic indexes evidenced rapid recovery in terms of the foreign exchange reserve, which exceeded 74 billion U.S. dollars; reduced external debt (from $54.1 billion in 1997 through $20.2 billion in 1998 to $1.1 billion in 1999); and high growth in manufacturing and equipment investment (The Korean National Statistics Office, 1999; Jang, 2000). Nonetheless, high rates of unemployment persisted.

2.4 Diversity of Government's Labor Controls

For descriptive purpose, this study divides the shifting labor control strategies into four sub-periods by relatively distinctive characteristics. Such categorization is equated with shifts in power structure. The first period is 1987-89, the first part of Roh's government, which is characterized by partial liberalization in industrial relations. Second is the latter part of the government (1990-92), during which time authoritarian repression resumed. The third and fourth periods are under the civil governments. The former is from 1993 to 1997, immediately prior to the IMF-intervention. It is distinct from the first two periods in that market mechanisms were reinforced in labor controls. The last period, 1998-99,[43] is the first part of the Kim Dae-joong government, which is characterized by a

[43] This study is confined to the first part of the Kim Dae-joong government because of the limitation of available empirical data sets.

neo-liberal industrial restructuring program and partial advances in neo-corporatism at national level of politics of industrial relations.

Partial liberalization: 1987 ~ 89

The first period (1987-89) is characterized by "partial" liberalization, which began with the political opening following the 1987 democratization. Widespread collective resistance by the working class in 1987 forced the government to reduce, at least temporarily, past unilateral authoritarian oppression. The government had little choice but to tolerate challenges from the organized workers, partly accommodating the explosive demands of the working class with higher wages and organizational freedom. This period witnessed a shift from interventionist to partially autonomous industrial relations. Roh's government declared the principle of autonomous industrial relations, securing the right to unionization and unions' right to undertake their daily activities without direct intervention (The Ministry of Labor, 1988). Hong (1991) evaluates this as a step "from avoidance toward recognition" of unions. For example, the Ministry of Labor denied the request of the Ministry of Commerce and Industry to impose immediate (mandatory) arbitration on Hyundai Auto's strike and Daewoo Shipbuilding Co.'s labor dispute in 1988 (Roh, 1995).[44] The revision of labor-related laws in late-1987 also reflects partial withdrawal of the government: (1) partial recognition of industrial and/or occupational unions as an alternative to enterprise unionism, (2) elimination of administrative authority to inspect unions and keep them from organizing, and (3) partial recognition of union shops (Chang, 1999: 86-87). Partial liberalization appears to be

[44] In a sense, this event may imply that there were political disagreements among bureaucrats within the government, as the government did not implement a new, consistent policies in response to evolving independent unionism.

closely associated with economic prosperity in this period. In Przeworski's (1985) terms, the sufficient material base produced by the economic boom allowed the government to accommodate economic demands, especially wage raises, without sacrificing the political hegemony of the old ruling coalition between military power and Chaebols.

This partial liberalization was momentous in the history of Korean industrial relations. It opened democratic space for the evolution of independent unionism, at least at the functional level, which fundamentally advanced Korean industrial relations from the past unilateralism to the politics of industrial relations. Collective bargaining became a primary vehicle in determining wage and employment terms for the organized labor, and daily activities of unions such as grievance procedures expanded at the workplace.

Nonetheless, industrial relations remained authoritarian. Restrictive devices, so-called "three prohibitions" on plural unions, third party intervention, and political activity remained restraints on democratic, independent unionism.[45] In addition, large-scale labor disputes led by independent unions (e.g., Pung-san steel co. in 1989) were often suppressed by governmental discretionary intervention. Prohibitions on paying wages during a strike (so-call "no work, no pay"[46]) were strictly imposed by the government to limit unions' ability to mobilize their members to collective resistance. The government extended the scope of defense industries, where strikes were banned, and no entitlement of union membership was given for those who appealed unfair dismissal (Roh, 1995:90-91).

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[45] Appendix 2.1 provides detailed explanation on these restrictions with recent changes.

[46] In Korea, wages had been paid by employers even during strikes because (1) patrimonial relationships between employers and employees were dominant, and (2) there were few big labor disputes under the authoritarian regime in the pre-democratization period. Thus, the government had allowed these traditional work practices (Chang, 1999:116).

Partial liberalization policies in this period were ad hoc and unstable.[47] In other words, the government seems to have failed to create an alternative control mechanism to replace the past authoritarian approach, which resulted in an inconsistent swing between past unilateralism and limited autonomous industrial relations. This contradictory inconsistency was, in part, attributed to imperfect democracy in 1987. Although democratization was initiated by students and the middle class, the transition to democracy was achieved by political negotiation between the ruling block and conservative parties (Cho, 1993; Lim, 1998), in which Korean unions and workers had few central roles. In addition, it proceeded in a period of economic prosperity, and thus, the old ruling coalition succeeded in retaining the political hegemony even after the June struggle in 1987 (Cho, 1993).

Resumed Authoritarian Repression: 1990 ~ 92

At the beginning of 1990, the weak interventionist approach of the government entirely returned to authoritarian repression. The ease of the return to repressive control was due to the structural weakness of an imperfect democracy. The resumption of repression also came along with the economic downturn in 1989. As material resources were steadily depleted during the economic recession due to the end of the three-lows era and rapid catch-up of later developers such as Indonesia, Malaysia, and China, Roh's government resumed the old repressive labor control policies by restricting wage increases through wage guidelines, and physically and legally oppressing militant

[47] The term of 'ad hoc' stressed on the disturbance and disagreement within the government about the new alternative rules to replace the past repressive authoritarian ones. In fact, the government showed inconsistent responses to the evolving unionism, and there were some conflicts and disagreement among bureaucrats in Ministry of Labor and in Ministry of Commerce and Industry as described.

independent unions. The government announced a crackdown, freezing wage increases to single digits at 300 large-sized firms in 1991, and declared a policy of direct intervention into illegal[48] labor disputes for national security (Choi, 1997).

In addition to economic pressure, the government resumed political repression vis-à-vis independent unions. The KTUC (the predecessor of the KCTU), the first national peak organization of independent unions after *Jun-Pyung*[49] in the late 1940s, was outlawed and oppressed. In 1990, 456 independent unions established the KTUC as a national center for democratic, independent unionism, differentiating itself from the business unionism of the FKTU (Kim, 1995:400). It, then, covered 160,000 members, about 8.6 percent of total organized workers. However, it was targeted for tough coercion by the government, and as a result, the organizational base was totally broken in a year (Kim, 1995).[50]

An overemphasis on political repression at the macro level is, however, apt to overshadow the state-corporatist aspect of the labor controls of this period. Careful attention should be paid to the fact that the labor controls of this period combined "selective" oppression vis-à-vis the independent unions at the macro level with individual economic compensation at the micro level.

At the national level, governmental repression was exercised 'selectively' concentrating on independent unions. While politically oriented independent unionism

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[48] As described before, then Korean labor laws were restrictive, especially to union activities, and at the same time, the government had wide discretionary power to define illegality of industrial action.

[49] Jun-Pyung was a national union confederation led by the left during the late 1940s after independence. It was repressed and broken by U.S. military government.

[50] Decrease in organizational power of the KTUC was dramatic as seen below.

	January 1990	March 1991	% Change
The Number of Affiliates	456	238	- 47.8 %
Membership	166,307	91,572	- 44.9 %

Source: Kim (1995:400)

was broken down, as in the case of the KTUC, the FKTU was not only officially (and legally) granted "monopoly representativeness" (Choi, 1997:368) but was also partly sponsored as a political sub-partner by the government. First, the "banning of plural unions" rendered it legally impossible for the independent unions to become a legally recognized entity. Second, Roh's government accepted the FKTU's proposal to establish the NESC (the National Economy and Society Council) to jointly consult on economic policies and legislation between labor and management.

Table 2.1. Governmental Financial Subsidy for the FKTU

Year	1985	1986	1988	1989	1990	1991	1992	1993	1994	1995
Won, million	109	109	124	1,838	3,195	5,770	4,327	6,484	7,527	6,186
Exchange rate	890	861	684	671	707	733	780	802	803	771
$ U.S, million	0.12	0.13	0.18	2.74	4.52	7.87	5.55	8.08	9.37	8.02

(Source: Kim, 1997a:123, the Bank of Korea, each year)

Third, the governmental subsidies to the FKTU steadily increased as seen in Table 2.1. Kim (1997a) claims that the official subsidies from government may restrict the independent activities of the FKTU.

Although the government attempted to incorporate part of organized labor under its authority through the official FKTU, such state-corporatist co-optation over the Federation does not appear to have had the purpose of obtaining political support from organized labor as was the case with the populist governments in Latin America.[51] It occurred because the Federation lacked sufficient abilities to play the role of an "associational organization" which is required to have abilities to substantially represent,

[51] Juan Peron's government in Argentina extended sufficient inducement such as the Peronist law of 1945 to improve the labor market status of the union in order to gain political support and cooperation from the labor (Silverman, 1967). In Brazil, since the corporatist Estado Novo (New State) in the 1930s, Vargas strengthened a more populist stance and introduced a more inducement-oriented labor law in order to mobilize the labor's political support (Collier and Collier, 1979). In Mexico, the ruling party, PRI (Partido Revolucionario Institutional) had gained political support from the wide popular sector (i.e. workers and peasantry class) by assisting the national organization of the labor, the CTM (the Confederation de Trabajadores de Mexico) since 1911 revolution (Song, 1991).

lead, and discipline member unions. Although the Federation embraced a third of the organized labor (about 1 million), its authority over members was limited; Only 20 percent of the affiliates donated membership fees (Choi, et al., 1999); collective bargaining authority was decentralized to local unions, and that leadership was very weak (Choi et al., 1999).

The discontinuity between the Federation and the rank-and-file and the absence of substantial authority reduced practical incentives for the government to positively co-opt the Federation and the section it represents. Rather, the government made a "passive" use of the FKTU to delay the development of independent unions, which are opposed to the dependent FKTU, as a national body with substantial political power.

In contrast to "selective" repression at the national level, the government provided institutional protection for workers at the workplace level, as a substitution for the economic role of unions to discourage individual workers to belong to unions. First, the government began to institutionalize labor welfare programs to mediate labor disputes (Roh, 1995). Employees Welfare Fund (EWF) was enacted, whereby employers were obligated to donate part of profits (5/100 of the net profits before the deduction of tax) to establish an employees welfare fund (Employee Welfare Fund Act, Article 13). This fund was to use its revenues to improve employees' welfare by supporting aid house purchases, loans, and scholarships for employees' children (EWFA, Article 14). Second, President Roh announced a program to build 2 million houses mainly for employees in December 1990. For this, the government increased financial assistance for employees' house purchasing, at the same time giving tax-reductions to the builders. Third, the

"Employment Insurance System (EIS)"[52] was to be introduced in 1995. This system was to mediate unbalances in labor demand and supply, to provide vocational training, and to provide unemployment benefits for the unemployed. Employers with 30 or more workers were required to pay into the unemployment fund.

These employee welfare programs substituted governmental actions for the welfare functions of unions to reduce individual workers' incentive to belong to unions, while helping the smooth adjustment of labor supply in the process of industrial restructuring. The relevant welfare program cost was distributed among employers in the form of quasi-taxes (Roh, 1995). As Block, Lee, and Shin (2000) explain, this approach reflects a typical characteristic of the Korean industrial relations model in which the government supports competitive, large-scale firms, especially Chaebols, and in turn, trickles down the economic rents to the working class in the form of relatively high levels of wage, employment security, and labor welfare programs.

It is worthy to note that the regular activities of unions at the workplace (functional) level, especially collective bargaining, were untouched by repressive governmental intervention unless the labor disputes were organizationally associated with independent unions and/or considerably threatened the national economy. This minimal intervention was related with relatively high wage increases, averaging 8.5 percent in 1990~92, even under the economic downturn, which is a similar level to the average 8.6 percent in the previous economic boom (1986~89). From this view, the labor controls in this period were a combination of "containment and inducement" in Collier and Collier's (1979) words; the government divided and ruled organized labor both by delaying the

[52] EIS is an unemployment insurance, which involves a positive labor market program such as vocational training and job-security network as well as unemployment benefit.

political evolution of independent unionism and by supporting the domicile FKTU at the national level, while accommodating both social welfares needs and limited autonomous collective bargaining[53] at the workplace level to insulate workers from the unions. This pattern is very similar to the state-corporatist structure.

Market-oriented Control With Pseudo-Inclusion

The third period (1993-97) began with the Kim Young-sam[54] government, which was the first civil government after thirty two years of military regimes.[55] This period is characterized by mixed controls of "market-oriented labor control" at functional level and "pseudo-inclusive politics" at national level. A distinct feature is that individual capitals emerged as major actors in workplace industrial relations under the patronage of the government, and simultaneously, the government controlled organized labor at the national level, while seating back from that functional level. At the functional level, individual employers, especially Chaebols, took the leading role in industrial relations. This was institutionally reinforced by the government's policies of labor market flexibility.

From the onset in 1993, the Kim Young Sam government embraced broad-reaching policies of deregulation both to stimulate the economy, then in recession, and to fundamentally enhance national competitiveness by transforming the government-led economy into a market economy (Lee, 1997; Jang, 2000). This program involved reduced

[53] Such relatively autonomous bargaining renders an important inducement under the authoritarian industrial relations regime. The government attempted to confine unionism to economic interests, blockading political evolution.
[54] Kim Young-sam was one of the leaders, together Kim Dae-joong, who had struggled against military dictatorship since Park's military government in 1961.
[55] From the time of Park's regime (1961~1979), military power ruled Korea for 32 years, through Chun's government (1981~1987), and Roh's government (1988~1992).

intervention in the private sector, relaxed administrative regulation (e.g., simplification or abolishment of an excessive bureaucratic licensing system), reduced government size, reduced intervention in the financial system, liberalized policies for private transactions of foreign exchange, and the opening of domestic markets to foreign investors (Lee, 1997; Block, Lee, and Shin, 2000; Jang, 2000).[56] This program granted wider autonomy to firms particularly in regards to financial decisions and flexible usage of the workforce in response to changes in the business environment such as new technology and industrial restructuring, departing from the long-time sustained protectionist institutions and practices for life-time employment. The Chaebols in particular benefited from this enhanced autonomy.

The program of market-oriented approaches for labor market flexibility challenged the traditional employment security which had characterized the Korean industrial regime since the 1960s. Strict regulations on layoffs began to be removed allowing employers' flexible redeployment of labor. First, an employer's right to terminate an employment contract by "reasons of managerial difficulty" was recognized in a court decision in 1992 (Chang, 1999). Until 1990, the Supreme Court had strictly limited "layoff by managerial reasons" to cases when employers were unable to continue to run their businesses or faced serious financial problems unless permitted to lay off employees (the Supreme Court Decision, 1990.1.12). This approach was sustained by the Ministry of Labor guidelines limiting layoffs for business rationalization to instances when firms would otherwise go bankrupt, when business operations had stopped, or when workers could not be transferred (Block, Lee, and Shin, 2000). Further, strict

[56] This deregulation and reduced intervention in the financial system was to be a key factor in the financial disarray that led to IMF intervention in 1997 (Block et al., 2000).

preconditions were required including (1) good-faith efforts to avoid layoffs, (2) the establishment of rational, fair criteria to select the laid-off employees, and (3) good-faith consultation with trade unions or employees councils.

However, these long-held policies were substantially reduced in the late 1991. In the case of Dong-boo Chemical Inc, the Supreme Court recognized (1) work reorganization for productivity or core competency, (2) the introduction of new technology, and (3) restructuring in response to technological innovation as legitimate reasons for layoffs (The Supreme Court Decision, 1991.12.10). This new decision fundamentally altered the prior strict interpretation of "desperate managerial reason."

Second, the illegal use of dispatched workers[57] in place of regular employees increased sharply in 1992. The government had outlawed the dispatched worker system (or leasing worker system) because of (1) the unstable employment relationship of the dispatched workers, (2) the deterioration of employment terms such as low wages and poor benefits, (3) the fear of dualism in the labor market, and (4) the powerlessness of trade unions (Chang, 1999). Despite this ban on the dispatched worker system, the number of illegal dispatched workers skyrocketed from around 14,000 in 1986 to over 400,000 in 1996 (KCTU, 1996:393). Moreover, the administrative authority conspired in the illegal use of dispatched workers (Chang, 1999).

These policies, *de facto*, bolstered employers' control power at the workplace level, constraining unions' bargaining power. In particular, in order to rationalize their businesses in a large scale, Chaebols started to implement flexible management strategies,

[57] Dispatched workers are workers who are dispatched by a worker-leasing company to firms which need temporary labor. They are under the employment contracts with the leasing company, but they are dispatched and work for the lease-holding companies. Accordingly, they do not hold right to be a union member within the lease-holding companies because their employers are the leasing companies, not lease-holding companies.

so called "new management strategy," in the mid 1990s. The rationalization was conducted by reducing the number of regular workers through reorganization and the automation of the work-process, and utilizing part-time workers and subcontracting to respond to the fluctuating demands (Lee, 1999). The use of robotics in production lines sharply increased, while labor-intensive work processes not amenable to automation were transferred to external subcontractors (Kwon and O'Donnell, 1999:282). Pay-for-performance schemes were also widely introduced in place of seniority-based payments (Chang, 1999), fueling competition among individual workers and reducing workers' solidarity.

Although labor market flexibility contributes to productivity increases, unbalanced flexibility increased the number of unstable employees with low incomes and thus shrunk consumption (Jung, 1999). In addition, the rationalization of the workforce reduced employers' labor demand, which in turn, weakened the power of the independent trade union movements (Kim, 1991; Lim, 1992). At the national level, Kim's government experimented with social pacts with organized labor such as the Central Agreement on National Wage (in 1993-4) and IRRC (in 1996-7). Instead of using governmental wage-guidelines, the government induced a national wage pact between the FKTU and the KEF (Korean Employers' Federation). The peak organizations agreed to a wage increase of 4.7 to 8.9 percent in 1993, and 5.0 to 8.7 percent in 1994. Although these experiments were criticized by academics and the independent union camp mainly because of imperfect social agreement with exclusion of the independent unions (Song, 1994)[58], they have

[58] Song (1994) criticized this central agreement of national wage as an 'elite-dominated' social pact, which did not satisfy two essential elements; one is consent and support from membership unions, the other is organizational base of the FKTU to discipline the member unions not to leave away the agreement. Because of the lack of the two conditions, the central agreement was just 'coerced-tripartite pact.'

been identified as the first meaningful step toward a more advanced era of industrial relations (Choi, et al., 1999).

The government's ongoing experiment with social pacts culminated at the conjuncture of "the reform of labor-related law and industrial relations" in 1996-97. For this national agenda, the IRRC was composed as a tripartite body including labor, business, and the government. In addition to bringing these major industrial actors together at the national level, the KCTU (Korean Confederation of Trade Unions) was allowed to participate as a social partner. This Confederation was built as a national peak body of independent unions in 1995, covering 861 unions with a membership of 319,000 (Kwon and O'Donnell, 1999:286). Although outlawed by the government, it evolved to become a central countervailing power to the government, Chaebols, and the FKTU with marked organizational growth, increasing by 25.3 percent in 1996 to 490,000 members (Kwon and O'Donnell, 1999). The IRRC played a key role in negotiating a trilateral agreement on controversial issues including main restrictions such as the prohibition of plural unionism, third party intervention, and the political activities of unions.[59]

However, the IRRC was not a social corporatist body in terms of a Western model (Choi et al., 1999; Song, 1999). Despite inclusion of the KCTU within the national forum, the government continued to marginalize the influence of the KCTU within the negotiation, gaining "procedural due" of the negotiation from the formative participation of the KCTU. In addition, the final agreement within the IRRC was entirely destroyed in the National Assembly in an illegal manner, and Kim's government included coercive clauses in its proposed revisions of labor law including (1) the continuation of restrictions

[59] Refer to Appendix 2.1. for more detail definition and recent changes.

on recognition of multi-unionism and union organizing in the workplace, (2) the continued restriction of legal recognition at the national federation level except the FKTU, (3) continued restrictions on the right of public sector workers and teachers to organize, and (4) the continuation of limits on the ability of unions to take part in electoral politics (the KCTU, 1997; Kwon and O'Donnell, 1999; Ranald, 1999). The ruling New Korea Party steamrolled the new revision of labor-related law through the National Assembly on December 26, 1996, in the absence of the opposition parties and without debate or public scrutiny.[60] This caused harsh national resistance led by the KCTU with the support of the FKTU. The nationwide General Strike was initiated by the KCTU in December 1996, and lasted until January 1997. About 96 affiliates of the Confederation went on strike and organized street demonstrations, which at their peak involved 146 unions and 200,000 workers. As a result, the government revised its amended laws, acceding to unions' demands for multi-unionism in 1997.

In sum, despite the mixture of policies, the "market-oriented approach" was more dominant than the corporatist approach during Kim's governance as called a 'weak pseudo-corporatist' approach in Im's (1997) term. The market-oriented approach is characterized by "indifference"; institutionalized protections were removed to increase labor market flexibility not only to neutralize the workplace power of the unions in the union sector but also to drive non-unionized individual workers into the competitive labor market. The strong push toward de-institutionalization may have reflected the government's awareness of long-term economic recession during the mid-1990s. It directly resulted in the reduction of real wage increases, from 2.4 to 7.0 percent (average

[60] The ruling party rewrote the government bill in which multi-unionism would have been immediately allowed at the national level and delayed this clause until 2000 (Chang, 1999:212).

5.5 percent) in 1993~97, which is a 3 percent decline on average compared to the previous repression period. Employment security also suffered as seen in the increase in the number of temporary workers from 41.2 to 45.9 percent from 1993 to 1997 (National Statistics Office, each year). The declining union status was due mainly to the policies of labor market flexibility which reduced the economic power of the unions at the workplace level. It differs from the earlier state-corporatist controls in which repression was focused on the independent unions at the national level, allowing individual workers to enjoy improved wages and social benefit. The instability of employment pressured unions to limit wage demands relative to previous years, as job security was no longer institutionally guaranteed. In essence, union power was sharply reduced by market-oriented control strategies, while the pseudo-corporatist approach at the national level was merely rhetoric.

Paradoxical Mixture of Neo-liberalism and Neo-corporatism

Labor controls in the fourth period (1998–99)[61] were deeply affected by the IMF-intervention. Facing financial insolvency due to the contagion of the 1997 Asian currency crisis, the Kim Young-sam government requested bailout money from the IMF. In return for financial relief assistance, the IMF imposed extensive neo-liberal industrial restructuring including Chaebol reform, intensified financial retrenchment, structural adjustment of financial institutions, and labor market reform toward flexibility (IMF, 1997). The Kim Dae-joong government [62] was installed upon both successful

[61] This study deals with the first part of Kim Dae-joong governance due to the limitation of empirical data.
[62] Kim Dae-joong government came to the office in 1998 immediately after the IMF-crisis. Kim's government was based on regional coalition with extreme-conserve party, which, to some degree, dissipated labor-friendly reform.

implementation of the IMF bail-out program and domestic economic recovery from the crisis.

Kim's government intended to implement the economic restructuring program imposed by the IMF for a successful escape from the economic crisis through the form of a "social corporatist compromise" between labor, management, and the government (Kim, 1999). Kim's government assembled the "Tripartite Committee" consisting of labor, employers, and the government in order to negotiate a national agenda for the social protection of workers, economic restructuring, and industrial relations laws (Song, 1999). This form seemed to be the option that the government could take in order to induce the political support from organized labor, required for the fulfillment of the IMF stand-by arrangement.

In its initial stage, the Tripartite Committee was successful in achieving an agreement between labor and management and formed the Social Compact[63] for economic stabilization and job security in February 1998. The Committee recognized that labor market flexibility was needed to settle the insolvent firms and reduce the surplus working force, and also was an unavoidable part of the IMF program in Korea (the KLSI, 1998:2). In return for this sacrifice, trade union rights to engage in political activities and organize teachers and public servants were recognized. In addition, measures to cope with the soaring unemployment and expand the social security network (e.g. employment

[63]The Social Compact includes (1) government and employers will construct nation-wide organization and prepare a policy package to combat unemployment; (2) all parties will help improve job security by introducing work-sharing; (3) all parties will strive to minimize lay-offs and to support firms in financial trouble; (4) all parties will do their best to eliminate unfair labor practices and establish monitoring; (5) the policy-making process will be open to labor unions. Union will participate in making and implementing important policies affecting wage-earners standard of living; (6) all parties have rights and duties in restructuring conglomerates; (7) the reform of public enterprises will reflect labor-management agreement; (8) the teachers' union will receive official recognition; (9) all parties will strive to improve worker participation in management; and (10) labor laws will promote industrial democracy (Song, 1999).

insurance system) were agreed to by the government (the KLSI, 1998). However, the Compact was not successfully fulfilled, which may be attributed to (1) internal struggles and factionalism within the KCTU[64], (2) government's unilateral restructuring of the public sector by the government (especially, the bank industry), and (3) employers' abuse of the power to layoff workers in the process of downsizing. Thereafter, the Committee proceeded with severe difficulties.

Taken as a whole, the failure of the Committee to produce a social agreement of any duration or lasting impact on Korean industrial relations was followed by its *de facto* collapse (Block et al., 2000). Shortly after producing the social pact in February 1998, labor representatives began to disassociate themselves from the Committee; delegates of the KCTU withdrew in March 1998, returned in June, but withdrew again along with delegates of the KCTU in February and April 1999. The FKTU returned in August 1999, but the KCTU has remained away since February 1999 (Block et al., 2000; Song, 1999; Yoon, 1999).

The fundamental reason for the failure of the tripartite system is partly attributable to the severe austerity policy forced by the IMF. This caused discontinuity of the Korean industrial relations model, where the government played a decisive role in maintaining job-security and better employment terms through financial support to competitive employers. The reduction of the governmental expenditure broke the "virtuous circle" of

[64] The Social Compact was denied by rank and files who were too angry to accept layoff. In the Provisional Congress of KCTU held just a few days after the announcement of the Tripartite Agreement, representatives turned down the agreement. The KCTU leadership resigned and was replaced by the Emergency Committee. The Emergency Committee resolved to go on a national strike to protest the layoff, but stepped back at the last moment for fear of isolation and probable poor performance of the strike. Finally, the leadership leading the Tripartite Agreement was replaced by harder liner who vowed to lead the struggle against the government and the employers to abolish the legalization of layoff and ensure job security (the KLSI, 1998).

the Korean model, removing the "trickle-down" of benefits to the working class. In this sense, the Social Compact for job-security was doomed from the beginning as employers could not sustain a high level of employment in the absence of government patronage through the period of austerity (Song, 1999).

Simultaneously, the neo-liberal reform programs resulted in unprecedented mass unemployment in Korea. Unemployment virtually tripled in the year after the IMF intervention, reaching 1,850,000 at the end of 1998 (Song, 1999); unemployment soared from 3.1 percent on December 1997 to 4.5 percent in January 1998, 5.9 percent in February 1998, and 6.5 percent in March 1998 (Song, 1999). A survey of 24 major universities of Korea found that as of May in 1998, only 41 percent of students had found a job upon graduation (KLSI, 1998).

Mass unemployment reduced the bargaining strength of unions at the functional level. The decline in union bargaining power was reinforced by the shift toward more flexible labor market institutions, implemented through the revision of labor-related laws in 1997.[65] Real wages fell by 9.3 percent, and labor's share in the national income declined from 42.1 in 1997 to 36.4 percent in 1998 (KLI, 2000). These unfavorable outcomes reflect, in part, the roll back of protectionist labor laws. Alleviated lay-off restrictions in the new laws allowed management to readily downsize their workforce. The labor faction expressed concern that the enacted layoff system would be more likely to weaken the organizational basis of the unions because of the risk of employers' abuse of indiscrete dismissal (Chang, 1999:233-4).

[65] The revised labor laws entered into enforcement in 1998.

The enactment of a leasing worker system also allowed employers to use labor more flexibly. The system induced employers to reduce the number of regular workers and replace them with contingent workers. This resulted in a less stable employment structure. This form of flexibility has proven popular with employers, as temporary and daily workers, workers with employment contracts of less than one year, have amounted to 51 percent of wage earners in 1999 (National Statistics Office, 1999). Moreover, the long-term effects of the increase in temporary workers will undermine the organizational foundation of unions, as Korean unionism has been dominated by regular workers concentrated in the large-size firms (Kwon and Park, 1999). The segmentation between regular and contingent workers also hampers workers' solidarity by creating divergent interests among the working class and so engendering intra-class conflict.

In sum, the labor control policies of Kim's government were a paradoxical mixture of neo-liberalism and neo-corporatism. The mixture involved an intrinsic contradiction because the government restructured the economy towards a market-orientation, which undermines the labor market status of unions through the social corporatist compromise with labor. Accordingly, the corporatist compromise was inherently weak unless organized labor was given a quid pro quo for labor's sacrifice. The failure of the Tripartite Committee, which was utilized to initiate neo-liberal structural adjustments with adverse effects on unions, was not an accident. Thereafter, unilateral industrial restructuring of the government increased the instability of employment, elevating political tension between unions and the government.

2.5. Changes in Labor Controls and the Korean Industrial Relations Regime

Korean industrial relations had been subject to an authoritarian regime until the onset of the Kim Dae-joong government as coercive intervention of the governments sustained the substantial exclusion of organized labor in industrial relations. It should not be overlooked, however, that the degree of authoritarianism changed as evidenced by the shift of government's labor control strategy.

Compared to the period of pre-democratization, the authoritarian rules and controls, to some degree, weakened as democratization proceeded and organized labor evolved to become a substantial actor influencing the formation of rules of industrial relations in the period of liberalization. In the second period of Roh's government, coercive exclusion vis-à-vis independent unions was further reinforced at the national level; workplace industrial relations were, to some degree, untouched by the past authoritarian interventions of the government (Chang, 1999). Despite the harsh repression of the KTUC at the national level, local unions gained rights to bargaining and exerted their influence on wage determination at the workplace level. With the onset of the Kim Young-sam government, market-oriented controls with far-reaching labor market deregulation toward flexibility threatened union bargaining power in workplace industrial relations, on the one side. At the national level, independent unions were given partial (imperfect) authority to participate in negotiation of the national agenda of industrial relations reform including labor law revision, on the other side.

Despite partial advances in industrial relations with proceeding political democracy, the Korean industrial relations regime remained authoritarian in that

restrictions on the right to organization and bargaining (e.g., the banning of plural unionism, union political activities, and third party intervention) remained and organized labor did not share substantial authority to participate in decision-making at the national level through the period. It was, however, "weakened" authoritarian regime in which organized labor could retain bargaining power at the workplace level with partial authorities at the national level within government's experiments with social pacts. Weakened authoritarianism, instead of democratic industrial relations, is due to the imperfect nature of the democracy as described.

Then, were Korean industrial relations shifting toward other regimes in the fourth period coupled with IMF intervention? IMF intervention was an epochal event in Korean industrial relations. Above all, it brought neo-liberalism, with the dominance of market forces, to the Korean economy, restricting the government autonomy to manage the economic system. Under the constraint of the IMF program, the Kim Dae-joong government attempted to include organized labor within a corporatist arrangement, that is, the Tripartite Committee, to overcome the economic crisis. To date, the attempt seems unsuccessful. As noted, the fundamental reason underlying the unsuccessful Tripartite Committee is the inherent contradiction between the threat to unions posed by the goal of neo-liberal restructuring and the imperfect corporatist arrangement in which organized labor has little authority to intervene into the process of labor policy formation. Nonetheless, organized labor has retained organizational achievements; the KTCU has been legally recognized, and prohibition on plural unionism, teachers' right to unionization, political activities of unions, and third party intervention have been removed. The government can no longer totally exclude the KCTU in forming labor-

related policies. In addition, the government-led economic structure has steadily shifted toward a market-led economy. In this sense, Korean industrial relations are in transition in the fourth period. As Block et al. (2000) suggest, the pressure of westernization in the period of post IMF-intervention triggered the major industrial actors to search for an alternative option to replace the past authoritarian regime.

APPENDIX 2.1

Main Restrictions on Unions' Activities and Recent Changes

	DEFINITIONS	RESTRICTIONS ON UNIONISM	RECENT CHANGES
Legal Restrictions on Unions' Activities			
Prohibition on Plural Unionism	• A secondary union, which would embrace the same unit to be organized as the existing union or is designed to hamper regular activities of the existing union, is not recognized.	• Park's government introduced this clause in order to repress the evolution of independent unions in 1963. • It protected the government-sponsored FKTU, while blockading the organizational evolution of independent unions. • It reinforced the structure of enterprise unionism.	• "The same unit to be organized" was newly introduced by Roh's government in 1987 • The 1997 revision allowed plural unionism for upper level organization. o The KTCU is recognized in 1999, while plural unionism in workplaces is reserved until 2001
Prohibition on third party intervention	• The third party, which is not employed in the relevant firms, has no rights to intervene into labor-management relations of the relevant firm.	• Chun's government introduced this clause in order both to blockade unions from social movement and to restrict industrial strike by forbidding even the FKTU and other upper level organizations to support local unions' activities in 1981. • 119 unionists were imprisoned by this clause from 1988 to 1995 (Chang, 1999)	• The 1986 revision excluded the upper federations (The FKTU and affiliate federations) from the range of the third party. • The 1997 revision abolished this clause.
Prohibition on Political Activities of Unions	• Trade unions are not allowed both to act for political parties and to collect funds for political objectives.	• It entirely restricted political empowerment of trade unions in Korea	• The 1997 revision abolished this clause.

Prohibition on Right to organization of Public Officials and Teachers	• Government officials (central and local governments) and teachers including private school teachers were not given the right to organize a union.	• The National Teachers Trade Union (NTTU) was established in 1989, but had remained illegal until 1999.	• The 1997 revision involved partial rights of government official and teachers to organize either works council or a trade union. • The NTTU was legalized in 1999. • Right to bargaining and collective action is banned.
Restrictive Labor Practices at Workplaces			
No Work, No Pay	• Employers do not pay wages during industrial strike. • Before 1987, employers traditionally paid wage to workers even during strike.	• As independent unions grew, employers demanded the enactment of 'no pay, no work' to the government, and the government recommended employers to keep the principle. **Trends of 'No Work, No Pay' Practices** Year: '87 '88 '89 '90 '91 '92 %: 6.7 18.6 34.2 83.9 87 93.3 (Source: Chang, 1999) o It restricted the industrial action of unions.	• In 1997-revision, prohibition of demands for wage payment during the period of industrial action is involved. • In addition, unions are prohibited to take industrial actions in order to demand and achieve wage payment during the industrial action.
Prohibition on Employer's Payment of Union officials' wages	• Employers conventionally paid the unionists wages. • Due to the strict legal restriction of union membership fee (2% of total wages), Union officials' wages had been paid by employers before 1987.	• Employers began to deny this payment after 1987, which threatened financial base of unions, especially unions of small and medium size firms. • The Ministry of Labor recognized that collective agreements involving this clause be illegal in 1995. • It threatened the financial base of unions	• In 1997revision, demands for wage payment of full-time officials are regulated as an unfair labor practice of union.

APPENDIX 2.2

COLLECTIVE BARGANING IN KOREA

This appendix briefly addresses the procedure of collective bargaining in Korea in order to help understanding of the Korean industrial relations system. Collective bargaining is regulated by the Trade Union and Labor Relations Adjustment Act. The representatives of unions bargain with employers over wages and other employment terms. As an enterprise union structure is prevailing in Korea, most collective bargaining takes places at the enterprise or establishment level (Park and Leggett, 1998). But regional and occupational bargaining is conducted at metal, textile, chemical, taxi, and financial industries (Park and Park, 1990). In particular, the form of joint bargaining at regional and occupation bases is often found in the small size firm sector (Park and Park, 1990). National wage bargaining also took place between the FKTU and the KEF at the national level.

As noted, Korean unions gained substantial status as a bargaining agent in the aftermath of democratization. In the period of pre-democratization, wages were significantly affected by the government's economic policies involving wage guidelines, but collective bargaining has become a more important means of regulating industrial relations since the 1987 democratization (Park and Leggett, 1998). Nonetheless, the coverage of collective bargaining in small-size firms employing 99 employees or fewer is less than 10 percent, and more than 90 percent of employees are not covered by a collective agreement (Park and Leggett, 1998).

The Trade Union and Labor Relations Adjustment Act regulates requirements for the legitimacy of collective bargaining and industrial actions. Unlike the United States, the scope of bargaining is not manifested in the Act. Rather, the scope of legal industrial dispute is stipulated as terms of employment including wage, working hours, welfare, dismissal and other conditions (The TULRAA, Article 2(5)). The procedure of negotiation with employers is, in general, similar to the United States. The union makes up a bargaining committee which involves typically some union officers and support staff from the upper level federation.

Prior to the 1997 revision, the Trade Union Act was ambiguous in regulating a collective agreement ratification. Correspondingly, contract ratification in many cases was subject to and approval vote of union members through a general meeting, which is similar to ratification in the United States (Katz and Kochan, 1992). Lee et al. (1996) found that 38 percent of sample bylaws of unions recognize the ratification right of the chairperson of the bargaining committee, while 30.5 percent required a vote in a general meeting prior to the final agreement. The 1997 revision manifested union representatives' right to ratify a collective agreement without a ratification vote.

As noted, a collective agreement in Korea has a similar effect to one in the United States with an exclusive representative system. In general, it embraces all of the employees regardless of whether they belong to the union when the unions represent more than half of the workers at the bargaining unit (the same kind of job employed under ordinary circumstances in a business or a workplace) (The TULRAA Act, Article 35). In addition, the agreement tends practically to cover other workers because the employers apply the same rules and conditions in order to reduce the technical costs of

wage bargaining. In some cases, collective agreements in Korea have a geographically binding force when more than two-thirds of the workers at the same kind of job employed in a given area come under the application of one collective agreement (The Act, Article 36).

When the unions come to an impasse with employers during bargaining, unions may go on strike over unresolved disputes. The union is required to get a majority vote for industrial action as mandated by the Act (Article 41), which is similar to the United States where industrial action generally needs a majority vote of members (see Katz and Kochan, 1992). Industrial actions are not recognized in some essential industries including defense, electricity, and water.

Korea has a tripartite commission involving representatives of labor, management, and the public for resolution of labor disputes. The Labor Relations Commission (the LRC), established in 1953, has provided for the mediation and arbitration of disputes (Park and Leggett, 1998). The LRC initiates the procedure of mediation when one or both parties submit a request for mediation. Under the 1997 revision, unions are required to file a formal mediation prior to industrial actions for their legitimacy. Disputing parties may request arbitration, and an arbitration award has a binding effect on both parties (Park and Leggett, 1998). During the period of both mediation and arbitration, industrial actions are prohibited.

In general, wage bargaining begins in Spring and tends to last about one month or more to reach a collective agreement (Park and Park, 1990) except in extraordinary cases. A survey shows the number of negotiation meetings in Korea. More than 80 percent of

the sample firms answered that a contract was agreed upon by the 10^{th} negotiation meeting (Park and Park, 1990).

The Number of Negotiation Meetings For Wage Agreement

Number of Negotiation Meetings	1~2	3~5	6~10	More than 11
Percentage (%)	8	43.8	34.2	14

(Source: Park and Park, 1990)

CHAPTER THREE

EMPIRICAL ANALYSIS STRATEGY

3.1 Introduction

This part is mainly concerned with outlining the empirical approach to measuring the bargaining power of the Korean unions. As noted, this study investigates union wage effects,[66] in association with labor control strategy from 1987 to 1999. It embraces both micro and aggregate approaches to union wage effects. The micro approach examines the individual wage effects of union using a micro dataset. The aggregate approach places more focus on the macro impacts of union density on industry-wide wage using aggregate data. In particular, the macro effects demonstrate market power of unions by capturing how union density affects industry-wide wages through affecting the elasticity of the demand for unionized labor.

While the literature in the United States found that the percentage of workers who are organized in a given product market has a strong positive association with the wages of union workers, little is known about the Korean case. Despite the fact that macro and micro effects address different aspects of union bargaining power, neither effect, constituting bargaining power of union, is exclusionary. Macro market power provides a foundation for power in the politics of industrial relations at the workplace

[66] Union wage effect, union-nonunion wage differential, and union wage premium are used interchangeably in this study.

level, and at the same time, the increase in workplace industrial relations power has a positive association with union density.[67]

This chapter consists of four sections. The first section reviews the prior research and methodological issues. The second section raises methodological issues including simultaneity and heterogeneity in estimating union wage effects. The third section specifies econometric models both for aggregate and micro data analysis. The last section includes an explanation of the dataset and descriptive statistics.

3.2 Review of Prior Literature

The effects of unions on wages have received much attention from Korean scholars, especially since the democratization in 1987. As reported in Table 3.1, the union wage differential in Korea was estimated to be between 7 and 13 percent during 1988 and 1989, and it declined to about 4 to 6 percent in the mid 1990s (Jeong, 1991; Chae, 1993; Kim and Choi, 1996; Cho and You, 1996). It increased shortly after democratization and decreased in the 1990s. These figures suggest that the bargaining power of Korean unions began to increase in the first period of post-democratization (Lee and Kwon, 1995) and, thereafter, declined throughout the 1990s.

Compared to other countries, the estimated wage effect is relative negligible (even negative), as shown Table 3.2.

[67] Division of macro and micro effect is technical to understand the multi-dimension of bargaining power of union. A union is a labor market institution, and simultaneously is a political association to involve in the politics of industrial relations responding the desire of union members (Block, 1980). In this sense, we can technically say that bargaining power depends both on market status of union and on political status at the functional level. Empirical part will address these aspects with different models, that is, aggregate panel model and micro data analysis.

Table 3.1. Prior Studies on Union Wage Effect in Korea

Author (s)	Approach	Dataset	Main Results		Note
			Year	Wage Effect (%)	
Park (1984)	Cross-section Analysis OLS with Union dummy	BSWS[1]	1980	7.31 7.7	Texitile Industry Chemical Industry
Bai (1991)	Cross-section Analysis OLS with Union dummy	BSWS	1986 1988	-1.35 8.41	
Jeong (1991)	Cross-setion Analysis OLS with Union dummy	BSWS	1988 1989	7.66 10.21	
Park (1991)	Cross-section Analysis Heckman-Lee model	BSWS	1988	4.2	Correcting Self-Selection
Kim (1991)	Cross-section Analysis OLS using separate wage equations along unionization	WSD[2]	1988	2.8 (Male) 3.4 (Female)	
Chae (1993)	Cross-section Analysis OLS using separate wage equations along unionization	BSWS	1989	18.2 (Male) 14.6(Female) 13.5 (Competitive Sector) -3.9 (Monopoly sector)	
Lee and Kwon (1995)	Cross-section Analysis OLS with Union Dummy	BSWS	1988 1993	8.41 -1.6	
Kim and Choi (1996)	Cross-section Analysis MLE model	DHPD[3]	1994	6.3	Correcting Self-selection
Cho and Yu (1996)	Cross-section Analysis Heckman-Lee model	DHPD	1994	2.1	Correcting Self-selection

Note: (1) Basic Survery of Wage Structure (the Minsitry of Labor, each year)
(2) Wage Survey Data (the Minimum Wage Committee, each year)
(3) Daewoo Household Panel Data (Daewoo Co., each year)

Table 3.2. Union Wage Premiums in Selected Countries

The United States	15 percent in 1967 ~ 1979 (Lewis, 1986)
	20 percent in 1985 ~ 1987 (World Bank, 1995)
The United Kingdom	10.2 percent in 1980 (Blanchflower, 1984)
	12 percent in 1983 (Green, 1988)
Canada	30.7 percent in 1971~75 (Christensen and Maki, 1981)
Mexico	10 percent in 1988 (World Bank, 1995)
Brazil	14 percent in 1992~1995 (Arbache, 1999)
South Africa	24 percent in 1985 (Moll, 1993)
	19 percent in 1997 (Shultz and Mwabu, 1998)
Malaysia	15 ~ 20 percent in 1988 (World Bank, 1995)

The prior studies have several shortcomings. First, with some exception (e.g., Park (1991), Kim and Choi (1996) and Cho and You (1997)), most prior studies mainly rely on the OLS (Ordinary Least Squared) method to estimate union-nonunion wage differential. The approach contains several explanatory variables representing the characteristics of individual workers (e.g. education, experience, tenure, etc.) and union dummy (for example, Bai (1991), Jeong (1991), and Lee and Kwon (1995)). Their models had the simple form;

$$\log W_i = X_i\beta + \alpha U_i + \varepsilon_i$$

where

log W_i equals the natural logs of the wage of individual i, X_i is a vector of earnings-determining characteristics, U_i is a dummy variable equal to 1 if individual i is a union member (or in a covered job) and 0 otherwise, ε is the error terms (Hirsh and Addison, 1986). The union wage differential is estimated by α, the coefficient of the union dummy. The OLS estimates may be biased and inefficient, however. The bias comes from an endogeneity problem, which is due to (1) simultaneity in determination of wage and union status including selectivity in union status (Ashenfelter and Johnson, 1972: Heckman, 1978; Olsen, 1980; Duncan and Leigh, 1980, 1985), and (2)

heterogeneity which is time-constant, but unobservable. The following section discusses these two issues in detail.

Second, the studies omit influential factors in wage determination in Korea. For example, their cross-sectional analysis does not control for the coincident effect of macro economic conditions, which may result in biased estimates. In addition, as Kim and Choi (1996) point out, political and social effects were not allowed for in an appropriate manner in the studies.[68] As noted, the decisive roles of the government as a powerful actor in industrial relations should be considered in estimating the union wage effect in Korea.

Third, in a similar vein, the cross-sectional approach commonly used in prior literature is not appropriate in estimating the Korean union wage effect. A sophisticated model is required to allow for the macro effects of time-dimensional, economy-wide trends and ongoing shifts in the labor control strategies of the government.

3.3 Methodological Issues: Simultaneity and Heterogeneity

Simultaneity in Wage and Union Status Determination

Simultaneity between wage determination and union status (Ashenfelter and Johnson, 1972; Duncan and Leigh, 1980) arises when union status is jointly determined with wage level. It is more likely that workers' union membership decisions depend on

[68] In addition, Svejnar (1980) criticizes that most current literatures in Anglo-Saxon countries assume that wage determination mainly relies on the characteristics of individuals, firms, and industries or market situation – i.e monopoly or competitive. In his empirical study, Svejnar begins with the assumption that the union wage effects in Germany may be somewhat different from those in the United States since the German institutions of industrial relations differ considerably from their Anglo-American counterparts (Svejnar, 1980:188). Noting the political and institutional shift such as Hitler's regime and codetermination, Svejnar estimates the union wage premium controlling these macro-effects.

the differential between anticipated earnings in their best union and nonunion alternatives (Schmidt and Strauss, 1976). Further, unionization (or union density) in an industry may be a function of industry wage (Ashenfelter and Johnson, 1972). If wage increase reflects high profitability in a relevant industry, union density may also increase because individual workers are more likely to share the economic rent through their unions. Another possibility is that a decrease in wage may also positively relate to increasing union density if workers want to protect their economic gain through unions during a harsh time (Schmidt and Strauss, 1976)[69].

The simultaneity relations between unionization and wages are also generated by labor market processes. In a flexible labor market, high wages reduce labor demand, which may decrease unionization. In a tight labor market with institutional job-security, employers have, to some degree, discretionary power to reduce employment in response to increasing wages such as reducing new recruitment or moving abroad.[70] In Korea, Park (1991) and Cho and You (1997) estimate the union wage effect with the assumption of simultaneous relations between unionization and wages. In such cases, the OLS estimate in the above wage equation may be biased or inconsistent since disturbance terms of the wage equations are correlated with workers' union status or the proportion of unionization in an industry. In their empirical work, Ashenfelter and Johnson (1972) evaluate the simultaneous bias caused from ignoring the endogeneity of unionism using a cross-section data.

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[69] Schmidt and Strauss (1976) writes "from a statistical point of view, this would imply that union membership, or extent of unionization, would more properly be viewed as jointly or simultaneously determined with wages, rather than being treated as exogenous."

[70] In mid 1990s, facing increasing domestic wage, Korean employers attempted to adjust their employment by freezing new recruitment or moving firms to foreign countries with low labor cost such as China, Vietnam, Malaysia, and Indonesia (Kwon and O'Donnell, 1999).

More precisely, consider the two-equations structural model of wage and union status without intercepts,

(3.1) $$Y_{i1} = Y'_{i2}\,\alpha_1 + Z'_{i1}\,\beta_1 + \varepsilon_{i1}$$ .....(wage equation)

(3.2) $$Y_{i2} = Y'_{i1}\,\alpha_1 + Z'_{i2}\,\beta_2 + \varepsilon_{i2}$$ .....(union equation)

where

Y_{i1} is wage level, i denotes individuals, and $Z'_{i1}\,\beta_1$ indicates the linear functions of a set of exogenous variables. Two error terms are assumed orthogonal. Suppose that unionization, Y_{i2}, is a function of wage level, the unionization function can be expressed in Equation (3.2). The simple solution of the two equations shows that Y_{i2} is correlated with ε_{i1}, which causes the OLS estimates to be biased or inconsistent.[71]

Selectivity is a sub-type of simultaneity. If individuals self-select union status based on the prospective wage in the union and non-union sector, OLS estimates of the union wage differential will be biased. Self-selection may occur when a certain cohort of workers is concentrated on the union (or non-union) sector. Suppose that certain unobserved worker-specific characteristics such as productivity[72] are positively correlated with wage and union membership. If more productive workers prefer the unionized sector, the OLS will produce an upwardly bias estimate, incorrectly attributing the wage premium produced by the "omitted" variable[73] to unionism. Similarly, an upwardly biased estimate will occur when the employers in the union sector have incentive to hire

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[71] Plug the right-hand side of Equations (3.1) into y_{i1} in Equation (3.2), we get

$$(1 - \alpha_2\alpha_1)\, y_{i2} = \alpha_2\beta_1 z_{i1} + \beta_2 z_{i2} + \alpha_2\varepsilon_{i1} + \varepsilon_{i2},$$

$$y_{i2} = \{\alpha_2\beta_1/(1 - \alpha_2\alpha_1)\}\, z_{i1} + \{\beta_2/(1 - \alpha_2\alpha_1)\}\, z_{i2} + \{\alpha_2/(1 - \alpha_2\alpha_1)\}\, \varepsilon_{i1} + \{1/(1 - \alpha_2\alpha_1)\}\, \varepsilon_{i2}.$$

Therefore, y_{i2} is correlated with ε_{i1}.

[72] It is simply not possible to specify a set of variables that completely captures all worker-specific differences in productivity ability (Mellow, 1979).

[73] Heckman (1979) views this sample selection problem as a misspecification where (powerful) variables are omitted in the equation.

more competent workers because of some reason (e.g., low marginal costs or in order to compensate the union wage premium) (Bloch and Kuskin, 1978). This selectivity would be expected to cause a divergence in the quality of the workforces between the two sectors, leading to an accentuation of existing union-nonunion wage differentials (Kahn, 1979).

In econometric terms, the union dummy, U, in the wage equation may be correlated with the error term due to such omitted variables, and then it violates the exogeneity assumption, that is,

$$E(\varepsilon \mid U) \neq 0,\ Corr(U, \varepsilon) \neq 0,\ Cov(U, \varepsilon) \neq 0.$$

Heteroskedasticity is also present. Error variance is not constant since Var(y | U) is a function of U [74].

Heterogeneity

Heterogeneity bias arises when an unobserved fixed effect exists across periods. The unmeasured individual- (or industry-) specific quality difference, which does not change over time, may be correlated with union status, which may induce bias (Hirsch and Addison, 1986). If we take a wage equation as

(3.3) $$Y_{it} = X_{it}\beta + f_i + \varepsilon_{it}$$

, where Y_{it} is wage, i denotes the person, firm, or industry, t indicates the time period. The variable f_i captures all unobserved, time-invariant factors that affect y_{it} such as demographical, geographical, structural, and other features. Because f_{i1} is unobserved, the OLS estimates may produce biased estimates.

[74] Var (ε | x) = E (ε ^{2} | x) – [E (ε |x)] ^{2}. E (ε |x) ^{2} = σ ^{2}, but E (ε | x) is not zero in the case of *Corr* (x, ε) ≠ 0. Thus, no constant error variance is present (see Wooldridge, 1999: 52-54).

That is, Equation (3.3) is rewritten by

$$Y_{it} = X_{it}\beta + \nu_{it} \tag{3.4}$$

where composite error $\nu_{it} = f_i + \varepsilon_{it}$ for unobservable f_{it} is put into error term. Even if idiosyncratic error, ε_{it}, is uncorrelated with X_{it}, the OLS estimates is biased or inconsistent if f_i and X_{it} are correlated. Such bias is called heterogeneity bias caused from omitting a time-constant variable (Wooldridge, 1999).

3.4 Estimation Strategy and Econometric Models

For a consistent and efficient estimate of the effect of unionism on wages in Korea, this study used several improved approaches with a pooled time-series cross-sectional model,[75] which is fitted to appropriately control for the time-dimensional labor control regime and macroeconomic effects. To ensure the generality of empirical results, this study attempts two different approaches to union wage effects; aggregate data analysis and micro data analysis. First, the aggregate data analysis disentangles the macro effects of unionization at a given level such as the industry- or economy-wide level. Macro effects refer to the extent to which organization (or union density)[76] affects the industry-wide wage. It is an important aspect of union bargaining power since increasing organization provides organized labor with a substantial foundation for bargaining power by (1) reducing the opportunities for substituting nonunion for union products in a

[75] An alternative is a single time-series model to capture the effects of labor policies and macro-economic conditions. However, it presents a huge potential problem because our time period is 13 years, which is not sufficient in terms of sample size and degree of freedom.

[76] Organization, unionization, union density, and organizational density are interchangeably used in this study.

product market, (2) lowering the elasticity of demand for organized workers, and (3) diminishing the potential loss of employment for a given wage increase (Freeman and Medoff, 1981:561). The aggregate approach has, however, been ignored in Korea.

In empirical terms, aggregate data analysis is an approach to the effect of union density in a cohort (here, industry) on the industry-wide wage level.[77] It involves both random and fixed effects models to correct unobserved industry fixed effects. Further, a logistic model will be estimated following Belman (1986) and Voos and Mishel (1986) in order to correct the simultaneity bias between union density and industry wage.

Second, micro data analysis is used to estimate the effect of unions on individual wages. To overcome the selection bias of the conventional OLS model, this research attempts to estimate the individual effects of unions through applying a treatment effect model based on the works of Goldberger (1972), Barnow et al. (1980), and Greene

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[77] Aggregate data analysis has been used for estimating individual union/nonunion wage differential as many works attempted during the 1970s and 1980s when individual dataset was not available (Hirsch and Addison, 1986; Booth, 1995). That is, union wage differential is obtained from the coefficient α_1 on Ud_{it} and α_4 on the interaction terms by $(e^{\alpha} - 1)$. To simply say following (Ashenfelter and Johnson, 1972; Hirsh and Addison, 1986; Pencavel, 1991), the mean log wage in industry i is a weighted average of mean log wages for union and non-union workers, we can write

(1) $$\log W^*_i = Ud_{it} \log W^*_{ui} + (1 - Ud_{it}) \log W^*_{ni}$$

By definition, union wage differential,

$$D = (W_{ui} - W_{ni}) / (W_{ni}) = (W_{ui} / W_{ni}) - 1,$$
$$D + 1 = (W_{ui} / W_{ni}).$$

And it can be rearranged with taking logs and means,

(2) $$\log W^*_{ui} = \log W^*_{ni} + \log (1 + D).$$

Plugging Equation (2) into (1),

(3) $$\log W^*_i = \log W^*_{ni} + Ud_{it} \log (1 + D)$$

Postulating log W^*_{ni} is a function of personal and employers' characteristics and macro-effect, $f(C_i)$, Equation (4) may be rewritten,

(4) $$\log W^*_i = f(C_i) + Ud_{it} \log (1 + D)$$

, where $f(C_i) = f(X_{it}, P_t, E_t, I_t)$ which is equated with Equation (1.1).
However, it is less reliable in estimating 'individual wage effect of union' mainly due to the shortcomings of aggregate dataset (Hirsch and Addison, 1986; Lewis, 1986), so that our study estimates direct effect of union density on industry wage.

(1997). For comparison, the conventional OLS models will be initially estimated and then I will estimate more complete ones.

3.4.1. Aggregate Analysis: Union Density and Industry Wage Effect

The aggregate analyses involve an industry fixed effect correction model and a logistic model allowing for simultaneity bias. The analyses use two related panel data sets which are manipulated by a cohort of industry using the Basic Survey of Wage Structure (BSWS) in Korea from 1987 to 1999[78]. The first set is created by realigning 3-digit industries into 10-industry cohorts [79] according to the Korean Industry Standard Classification and by stacking them by year. The second data disaggregates the 3 digit-industry into 39-industry[80] cohorts. Each explanatory variable are average terms across a relevant industry in each year.

a. Conventional OLS and Industry Fixed Effects

OLS methods are not appropriate to estimate a wage equation with time-dimensional variables when unobserved time-invariant effects are correlated with the explanatory variables. For example, if unmeasured characteristics of industries such as market characteristics, [81] composition of firm-size, [82] geographical characteristics of

[78] The following section will provide details on data sets.
[79] The 10 industries are (1) manufacturing, (2) electricity, gas, and water supply, (3) construction, (4) wholesale and retail trade, (5) hotels and restraints, (6) transport, storage and communication, (7) financial intermediation, (8) real estate, renting and business activities, (9) education, compulsory social security activities, and (10) mining.
[80] The list of the 39 industries is appended.
[81] It refers to whether or the extent to which the market of the industry is competitive or monopolistic. If an industry has high degree of monopolistic market power, workers in this industry are more likely to organize

industry location,[83] and common inclination of workers to unionization in the industry[84] are (positively) associated with explanatory variables including unionization, the OLS estimate may be biased and inefficient due to the serial correlations between error terms across time.

Suppose the wage equation to be estimated takes the form,

$$(3.5) \quad log\ Wage_{it} = X'_{it}\beta + U'_{it}\alpha_1 + E'_t\gamma + \eta_2 P_2 + \eta_3 P_3 + \eta_4 P_4 + \alpha_2 U_{it}^* P_2 + \alpha_3 U_{it}^* P_3 + \alpha_4 U_{it}^* P_4 + f_i + \varepsilon_{it}$$

where

- log *Wage* = the mean wage in *i*th industry, *i* indexes 39 (or 10) industries, and *t* indicates time period;
- U = the proportion unionized in *i*th industry;
- E_t = A set of macro-economic characteristics to capture the business-cycle effects; lagged GDP, unemployment rate, trade balance, and labor productivity are involved;
- P = Four different sets of the government's labor policies; That is, P_1 is partial liberalization (1987-89), P_2 state-corporatist controls (1990-92), P_3 market-oriented policy (1993-97), and P_4 neo-liberal policy (1998-99); P_1 is the base period;

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a union to get more economic rents (see, Belman (1988)). Market structure may change over time so that it may not be exactly constant, but it tends to be roughly constant over some time period.

[82] For example, while the construction industry is generally composed of many small firms and few large-size firms, manufacturing may be dominated by big companies.

[83] Geographical characteristics of industry location (e.g. urban or rural area) may also have significant, positive impact on the mean wage of the relevant industry because of high level of consumer prices.

[84] In general, manufacturing workers are more likely to be unionized than service industry workers.

- $U*P$ = Interaction terms of union and policy variables[85];
- $X_{it}\beta$ = A vector of the mean values of personal and employers' characteristics affecting wage level such as education, experience, tenure, age, gender, and others;
- f_i = A set of time-constant fixed industry effects which are unobservable;
- ε_{it} = Idiosyncratic error term, which is assumed *i.i.d.* with zero mean and constant variance (Neumark and Wascher, 1992).

The coefficients on union density and interaction terms, α_1 to α_4, capture the industry-wide wage effect of unionization by period, but they may be biased by the presence of unmeasured industry fixed effect, f_i.[86]

In econometric terms, if we define the composite error term as $v_{it} = f_i + \varepsilon_{it}$, then Equation (3.5) can be written as

$$(3.6) \qquad log\ Wage_{it} = X'_{it}\beta + U'_{it}\alpha_1 + E'_t\gamma + \eta_2 P_2 + \eta_3 P_3 + \eta_4 P_4 + \alpha_2 U_{it}*P_2 + \alpha_3 U_{it}*P_3 + \alpha_4 U_{it}*P_4 + v_{it}$$

v_{it} is serially correlated across time since the unobserved variable, f_i, is within the composite error in each time period (Wooldridge, 1999)[87]. The positive serial correlation in the composite error term can be substantial. The usual pooled OLS standard errors

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[85] The interaction terms allow separate intercepts for each time period of the labor policies. Under the assumption that there has been considerable influence of the government on the wage determination, the changes in labor policies affect union's bargaining power so that the mechanism of wage determination may be, to a greater degree, different each time period.

[86] The pooled OLS standard errors are the usual OLS standard error, and these underestimate the true standard errors because they ignore the positive serial correlation of the errors within industry groups (Wooldridge, 1999).

[87] More precisely, by definition of idiosyncratic error term, ε_{it}, serial correlation can be expressed by

$$(3.7) \qquad Corr(v_{it}, v_{is}) = \sigma^2_f / (\sigma^2_f + \sigma^2_\epsilon),\ t \neq s,$$

where $\sigma^2_f = Var(f_i)$, $\sigma^2_\epsilon = Var(\varepsilon_{it})$, and *t and s* indicate different time period.

disregard this correlation so that they will be incorrect, as will the usual test statistics (Wooldridge, 1999).

Alternatives to the OLS estimates are the RE and the FE which remove the unobserved industry heterogeneity, f_i, through GLS transformation and subtracting the time averages from the corresponding variable.[88] Both the RE and the FE transformations allow the pooled OLS method to give unbiased estimators, and the usual t and F statistics are valid because of the absence of the unmeasured effect.

At issue is which estimate is a goodness-of-fit measure. In general, the FE is consistent but may not be efficient due to heteroskedasticity, while the RE is more efficient only if it is consistent. In addition, the FE assumes arbitrary correlation between f_i and other explanatory variables, X_{it}, P_t, and E_t, while the RE estimator posits no correlation between them (Greene, 1997; Wooldridge, 1999).

The Hausman specification test (Hausman, 1978) is generally used to decide which estimate is the fittest. The test is based on the idea that, under the hypothesis of no correlation, both OLS and GLS are consistent, but OLS is inefficient, whereas under the

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[88] It is useful to illuminate the underlying logic of the RE and the FE. The FE removed the time-invariant industry fixed effect by subtracting the time average from each variables. Let average Equation (3.5) over time for each i in a single form without intercept. Then we get

(3.8) $$y^*_i = X^*_i\beta + Z^*_i\alpha + f_i + \varepsilon^*_i$$

where

$Z = (U_{it}, P_t, E_t, U_{it}*P_t)$, and * refers mean values.

Subtracting (4.8) from (4.5) eliminates I_i and gives

(3.9) $$y^{\cdot\cdot}_{it} = (X^{\cdot\cdot}_{it})\beta + (Z^{\cdot\cdot}_{it})\alpha + \varepsilon^{\cdot\cdot}_{it}$$

where

$y^{\cdot\cdot}_{it} = y_{it} - y^*_i$, $X^{\cdot\cdot}_{it} = X_{it} - X^*_i$, $Z^{\cdot\cdot}_{it} = Z_{it} - Z^*_i$, and $\varepsilon^{\cdot\cdot}_{it} = \varepsilon_{it} - \varepsilon^*_i$. $y^{\cdot\cdot}_{it}$, $X^{\cdot\cdot}_{it}$, and $Z^{\cdot\cdot}_{it}$ are the time-demeaned data on y, X, and Z.

Now, we turn to the RE using the GLS transformation that eliminates serial correlation in the errors. Following Wooldridge (1999), by definition,

(3.10) $$y^{\circ}_{it} = (X^{\circ}_{it})\beta + (Z^{\circ}_{it})\alpha + \varepsilon^{\circ}_{it}$$

where

$y^{\circ}_{it} = y_{it} - \lambda y^*_i$, $X^{\circ}_{it} = X_{it} - \lambda X^*_i$, $Z^{\circ}_{it} = Z_{it} - \lambda Z^*_i$, $\varepsilon^{\circ}_{it} = \varepsilon_{it} - \lambda \varepsilon^*_i$, and $\lambda = 1 - [\sigma^2_\varepsilon / (\sigma^2_\varepsilon + T\sigma^2_f)]^{1/2}$ (T denotes time-period). y°_{it}, X°_{it}, and Z°_{it} are quasi-demeaned data on each variable. Compared to the FE estimator, the RE transformation subtracts a fraction of the time average, where the fraction depends on σ^2_f, σ^2_ε and the number of time periods, T.

alternative, OLS is consistent, but GLS is not. Therefore, under the null hypothesis, the two estimates should not differ systematically (Greene, 1997).

b. Logistic Model: Correcting Simultaneity

The logistic model used in this study addresses simultaneity between unionization and wage determination. Two structural models may be specified in a simple form as

(3.11) $$log\ Wage_{it} = f\ (\ Unionization,\ X_{it})$$

where X represents all of the other explanatory variables in Equation (3.6).

As noted, unionization is assumed to be a function of log $Wage_{it,}$[89] and then

(3.12) $$Unionization_{\ it} = f\ (\ log\ Wage_{\ it,}\ Z_{it})$$

where Z represents exogenous explanatory variables affecting unionization. The reduced form of the model of unionization is

(3.12.1) $$U_{it} = X'_{it}\beta + Z'_{it}\gamma + \alpha I_{it} + \varepsilon_{it}$$

where U is unionization and I is the identifier.[90] Some of Z can be involved in X of the wage equation, identification requires that there is at least an identifier, I, which is not involved in wage equations.

Although the unionization equation has been estimated with a linear probability model, it is more appropriately estimated with a log-odds model. The log-odds specification assures that the predicted values of U_{it} in Equation (3.12.1) fall within the 0 ~ 1 range (Voos and Mishel, 1986:114). Following Belman (1986) and Greene (1997), the log-odds model is

(3.13) $$U_{it} = (1 + e^{-W'\delta + \epsilon})^{-1}$$

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[89] The preceding section discusses the functional relationship between unionization and wages.
[90] The identification of the wage equation will be discussed in detail in the treatment effect model.

where W involves X and Z, and ϵ is the error term.

The log-odds model is transformed into a linear model by setting

(3.13.1) $$logit\ (U_{it}) = log\ (U_{it} / (1 - U_{it})).$$

and

(3.13.2) $$log\ (U_{it} / (1 - U_{it})) = W_{it}\delta + \varepsilon_{it}.$$

In order to solve the simultaneous structure of Equation (3.11) and (3.12), we have to replace U_{it} in Equation (3.11) with the expected value of U_{it} using 2SLS (two-stage least squares).

The expected U_{it} is

(3.13.3) $$E\ (U_{it}) = E\ [1 / (1 + e^{-(Wit\,\delta + \varepsilon it)})]^{91}.$$

Assuming that errors are homoskedastic and independent, the expected exponentiated error is $e^{\sigma sq/2}$, where $\sigma_{sq} = \sigma^2$ (Belman, 1986). Equation (3.13.3) can be rewritten as,

(3.13.4) $$E(U_{it}) = E[1 / (1 + e^{-(Wit\,\delta + \sigma sq/2)})].$$

The log-odds model is estimated at the industry mean values of the variables in the reduced form of the union status equation (Belman, 1986). Then, the union wage effect is estimated by 2SLS replacing $E(U)$ with U in the wage equation (3.11).

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[91] By definition, Equation (3.12.3) can be rearranged by $U / (1 - U) = e^{X\beta + \varepsilon}$, and simple solution get us to Equation (3.13)

$$U = (1 - U) * exp^{X\beta + \varepsilon}$$
$$U = exp^{X\beta + \varepsilon} / (1 + exp^{X\beta + \varepsilon})$$

Following Chow (1983:254), the logit model assumes that the probability P(U) is given by the logistic curve;

$$P(U) = exp^{X\beta + \varepsilon} / (1 + exp^{X\beta + \varepsilon})$$
$$= 1 / (1 + exp^{-(X\beta + \varepsilon)})$$

4.4.2. Micro Data Analysis: Union and Individual Wage Effects

While the aggregate data analysis illuminates the industry-wide effect of unionization, micro data analysis measures directly the individual wage effect of unionism. This analysis in this study has the advantage that a larger sample size allows a more accurate estimation of union wage effect for individual workers.

Traditionally, micro data analysis used to employ a split wage equations model between union and nonunion sectors (Heckman, 1979; Lee, 1979; Duncan and Leigh, 1980, 1985; Park, 1991; Chae, 1993; Kim and Choi, 1996; Cho and You, 1996). Although the split equation model has some advantages such as allowing for different mechanisms of wage determination between the two sectors,[92] it is not appropriate to capture the effect of labor politics on changes in the union-nonunion wage differential, of primary interest in this study. A treatment effect model is the fittest approach for the primary research objective; this study mainly concerns the changes in union wage effect as well as the effect of labor politics on the union wage effect, not the structure of union and nonunion wages.

Treatment Effect Model: Correcting Self-Selection Bias

The treatment effect model (Goldberger, 1972; Barnow, Cain, and Goldberger, 1980; Maddala, 1986; Greene, 1997) has been used to evaluate the benefits of social programs per se; this model allows for the self-selectivity bias resulting from the fact that individuals' decisions whether or not to participate in a program are based on their self-

[92] Also, a split wage equation model does not allow to test statistical significance of the effect of union on wage.

selection (Maddala, 1986:260-261). Economists apply this model to labor economics issues such as the problem of housing demand (Lee and Trost, 1978) and of education and self-selection (Willis and Rosen, 1979).

This study exploits their econometrical developments to estimate the union wage premium, correcting for self-selection bias. Selectivity bias is a concern whenever the assignment to treatment and control groups is not random (Barnow et al., 1980). In our case, union status is determined by individual choices whether or not to belong to the union sector. The OLS estimator of union status may be biased as well as inefficient if union status is the result of unobservable variables such as individuals' preferences or characteristics.[93]

Following Barnow, Cain, and Goldberger (1980), Maddala (1986), and Greene (1997), I specify a treatment effect model to evaluate the return to unions in a way that permits an unbiased estimation of the treatment effect allowing for self-selection. In our analysis, the treatment is which individuals choose to be in a unionized job. The observed variables are log (Wage), treatment (U_i = 1 for treatment group, that is, an individual choosing the unionized sector, U_i = 0 for control group, that is, an individual hired in the non-unionized sector), and other conventional independent variables.

Our wage equation follows the long-traditional specification of the Mincerian human capital equations, including the usual suspects such as age, gender, experience, etc. It is, however, augmented with labor politics and macro economic conditions, which are the main focus of this research. The wage equation takes a form as

(3.14) $$log\ Wage_{it} = X'_{it}\beta + U'_{it}\alpha_1 + E'_t\gamma + \eta_2 P_2 + \eta_3 P_3 + \eta_4 P_4 + \alpha_2 U_{it} * P_2 +$$

[93] This case violates the exogeneity assumption in the OLS.

$$\alpha_3 U_{it}^* P_3 + \alpha_4 U_{it}^* P_4 + \varepsilon_{it}$$

where Wage $_{it}$ is the real wage of ith individual at t time-period; X is the vector of personal and employers' characteristics such as age, gender, marital status, education, experience, firm-size, industry, etc; E involves macro economy trends, and P is labor control politics variables.

By definition of U, whether or not to select a union job is determined by

(3.15) $$U_{it} = 1, \text{ if } U_{it}^* > 0,$$

$$= 0, \text{ if } U_{it}^* \leq 0,$$

where U_i^* refers to an individual's desire (or preference) for a union job which is a latent variable, while only the sign of U_i^* is observable.

(3.16) $$U_{it}^* = Z_{it2}\gamma + \theta \log W_{it} + \lambda I_t + v_{it},$$

$$v_{it} \sim Normal\,(0, \sigma),$$

where Z is a vector of personal characteristics including other variables representing an employer's characteristics such as industry and firm size. The presence of $\log W_{it}$ in the union status equation reflects simultaneity between two equations.

The estimation of the system requires that the wage equation be identified.[94] As I only use the union status equation to correct for selection in the wage equations, the model will not recover its structural form and does not require identifying restrictions. Identification of the wage equations may be through non-linearity in the correction for selection or inclusion of variables in the selection model which do not appear in the wage

[94] In general, in a SEM (Simultaneous Equation Model), the structural form should be identified for unbiased (or consistent) estimates, which required both order condition and rank condition (Wooldridge, 1999). Order condition refers to that number of exogenous variables is greater that that of endogenous variable. Rank condition means that the first equation (in this study, wage equation) is identified if and only if the second equation (reduced form equation, union status equation in this study) contains at least one exogenous variable with a non-zero coefficient that is excluded from the first equation (Wooldridge, 1999).

equation. In general, identification through non-linearity is sensitive to specification. I identify the wage equation by including a variable, I_t, which reflect employer's avoidance/resistance to unionism. For the avoidance/resistance of employers, this study uses filed incidences of unfair labor practices as a proxy.

In Equation (3.14), (3.15), and (3.16), we suppose v_i is bivariate-normal, independent of Z, $log\ W_{it}$, I, and ε_{it} with expectation zero and variance σ (Barnow et al., 1980).

The covariance matrix for v_i and ε_{it} is

$$\begin{bmatrix} \sigma & \rho \\ \rho & 1 \end{bmatrix}$$

We seek the gap of expected log wage in Equation (3.14) in association with selection equation (3.15) and (3.16). log Wage of the union sector workers is

(3.17) $$E(log\ W_{it} \mid U_{it}=1) = X_{it}\beta + \alpha_1 + \alpha_2 P_2 + \alpha_3 P_3 + \alpha_4 P_4 + E_t\gamma + \eta_2 P_2 + \eta_3 P_3 + \eta_4 P_4 + E(\varepsilon_{it} \mid U_{it}=1)$$

$$= z\delta + \alpha_1 + \alpha_2 P_2 + \alpha_3 P_3 + \alpha_4 P_4 + \rho\,\sigma_\varepsilon[-\phi(w_i\phi)/\Phi(w_i\phi)]$$

where $z\delta = X_{it}\beta + E_t\gamma + \eta_2 P_2 + \eta_3 P_3 + \eta_4 P_4$, $w_i\phi = Z_{it2}\gamma + \theta\, log\ W_{it} + \lambda I_t$, ϕ is the standard normal density function, and Φ is the standard normal cumulative distribution function (Greene, 1997). Again, log Wage of the non-union sector workers is

(3.18) $$E(log\ W_{it} \mid U_{it}=0) = X_{it}\beta + E_t\gamma + \eta_2 P_2 + \eta_3 P_3 + \eta_4 P_4 + E(\varepsilon_{it} \mid U_{it}=0)$$

$$= z\delta + \rho\,\sigma_\varepsilon[\phi(w_i\phi)/\{1-\Phi(w_i\phi)\}].$$

Accordingly, the union/nonunion wage differential is

(3.18) $$E(log\ W_{it} \mid U_{it}=1) - E(log\ W_{it} \mid U_{it}=0)$$

$$= \alpha_1 + \alpha_2 P_2 + \alpha_3 P_3 + \alpha_4 P_4 + \rho\,\sigma[\phi(wi\,\gamma)/\Phi(wi\,\gamma)\{1-\Phi(wi\,\gamma)\}$$

$$= \Omega + \rho\,\sigma[\,\phi(wi\gamma)/\Phi(wi\gamma)\{1-\Phi(wi\gamma)\}$$

where $\Omega = \alpha_1 + \alpha_2 P_2 + \alpha_3 P_3 + \alpha_4 P_4$. If the correlation between two error terms, ρ, is not zero, the OLS estimates, α_1, is biased (Madala, 1986; Greene, 1997).

3.5 Data, Variable Definition, and Descriptive Statistics

Data and Variables

The BSWS (Basic Survey on Wage Structure) provides the basis of both the panel and the micro data sets used in this study. It is an annual labor market survey of the Ministry of Labor consisting of about 2,700 samples drawn by a stratified random sample method from establishments with 10 or more regular workers in all industries except agriculture, hunting, forestry, and fishing. This data set has several advantages. It provides detailed information on individuals' and employers' characteristics such as wage, age, gender, marital status, skill level, occupation, firm-size, industry, and so on. Industry and occupation are coded by the Korean Standard Industrial Classification (KSIC) according the UN Classification. The sample involves both blue- and white-collar workers who are employed on a regular basis.

The BSWS differs from its counterparts in the United States (CPS) and the British Commonwealth in that it indicates whether an individual is employed at a unionized establishment, rather than whether the individual is a union member. Therefore, our union variable refers to whether or not to belong to unionized sector.[95] This is unlikely to

[95] It is also well equated with other studies conduced with the information of coverage of collective agreement in the United States. In this sense, the measurement using the BSWS is analogous to the effect of collective bargaining coverage using the CPS in the United States.

cause substantial problems with comparability with the other data sets. In most instances, collective bargaining in Korea has the same effect as exclusive representation in the United States. In other words, collective bargaining in Korea is apt to embrace practically all of the workers in the unionized sector regardless of union membership. The Trade Unions and Labor Relations Adjustment Act mandates the coverage of the collective agreement to extend to non-union members at the same bargaining unit when the union represents the majority of the employees (The Act Articles 35 and 36). Furthermore, the collective agreement practically comes to embrace all of the workers because employers used to apply the agreement to the other workers to reduce technical costs. The agreement functions as the minimum standard for the terms of employment as worse conditions for non-members would induce them to join a union.

This study uses two different data sets, that is, panel and micro data sets which stack the BSWS data set involving other macro variables by year. The panel data set is aggregated up to the 39-industry leads of the 3-digit industries according to the Korean Industry Standard Classification.[96] The micro data set is a repeated cross-sectional (RCS) dataset which is created by stacking the BSWS data set by year. It is not a true longitudinal data set as the observation is independently conducted each year. Macro data indicating economic conditions and employers' resistance, which is published by the Korea Labor Institute, the Bank of Korea, and the Ministry of Labor, are combined with both panel and micro data sets.

In order to estimate the impact of the shift in labor control politics on union bargaining power, the econometric models include period dummy variables indicating the

[96] Thus, the panel data set has the industry mean values of each variables, and the list of 39 industries is in Appendix 3.4.

distinct labor control strategies of the government. Although these dummy variables may have a limitation that involves the coincident effects of simultaneous non-labor policy changes occurring during the same period, they have substantial advantages based on well formulated hypotheses to capture the impact of the labor policy changes. Thus, period dummy model has been commonly used by researchers to explain the impact of labor policies on industrial relations. For example, Svejnar (1980) used a period dummy variable model to estimate the impact of the dictatorship of Hitler's regime and codetermination on union wage premiums in Germany. In recent times, Weeks (1999) used a period dummy indicating the political changes in order to capture the impact of the changes in relation to unionism on wages and unemployment during the 1990s in Latin America. Belman and Monaco (2001) also employ a period dummy model to explain the effect of deregulation on wages in the trucking industry in the United States.

In order to reduce the unmeasured effect of omitted variables, this study involves comprehensive control variables affecting wage and union status determination. Following prior literature, the econometric models embrace conventional control variables including personal characteristics (e.g., age, gender, education, experience, tenure, and skill level) and employers' features (occupation, firm-size, and industry). In order to escape the complication of co-incidence between the union effect and the fluctuation of economy-cycles, the models involve one-year lagged GDP increase rate, unemployment, trade balance, and labor productivity per capita as key control variables, partly following prior works (Rose, 1987; Belman and Monaco, 2001). GDP is more likely to have a lagged effect on wages in Korea where wage bargaining during every spring relies on the economic performance of the previous year, and thus, lagged GDP

rate is put in place of GDP. The unemployment rate is incorporated to control the severe economic crisis in 1997-8 ignited by the Asian currency crisis. Further, the trade balance is added allowing for the Korean economy's high dependence on international trade.

In the treatment effect model, the number of unfair labor practices filed to the Central Labor Commission is used as an identifier in the union status equation. It is an indicator suggesting the degree of resistance or avoidance of employers against unionism, which is closely associated with union status (or unionization) determination but has little direct connection with wage determination. Definitions of variables are provided in Appendix 3.2 and 3.3.

Descriptive Statistics: Characteristics of Union and Non-Union Sector

Descriptive statistics of the sample shows the characteristics of the sample by union and nonunion sectors. As shown in Table 3.3, union workers earn 5,024 Won (Korean Currency unit) per hour,[97] while nonunion workers do 4,037 Won on average over the whole period. The gap of real wages between two sectors of main concern in this study is 24.3 percent. By period of the labor control policies, the real wage gap declined until Period III and increased during the period of IMF intervention; the wage gap is 34.1 in Period I, 23.7 in Period II, 19.24 in Period III, and 23.3 percent in Period IV. Age distribution is very similar in both sectors. The proportion of female workers is higher in nonunion sector (39 percent) than in union sector (29 percent), which suggests that male workers are more likely to belong to unions (or unionized firms) than female workers are

[97] This is about 5 US dollars.

Table 3.3. Characteristics of the Sample by Union/Non-union Sectors

	All Period		Period I		Period II		Period III		Period IV	
	Union	Non Union	Union	Non Union	Union	Non Union	Union	Non Union	Union	Non Union
Hourly Wage (Won)	5,024	4,037	2,890	2,155	4,171	3,371.1	6,200.9	5,200.6	7500.3	6082.9
Personal Characersitics										
Age (Year)	33.61	32.79	30.1	29.4	32.7	32.9	35	35	36.1	35.1
Female (%)	29	39	36	46	33	44	25	34	21	31
Marital Status (%)	65	58	56	48	63	58	69	65	73	63
Education (Year)	11.23	11.22	10.33	10.21	11	10.7	11.49	11.66	12.65	12.86
Experience (Year)	6.21	4.94	5.12	4.29	6.82	5.54	6.31	4.86	6.9	5.5
Tenure (Year)	5.92	3.28	4.31	2.82	5.19	2.6	6.8	3.43	7.91	4.28
Employer's Characteristics										
SME (%)	39	71	28	59	43	81	45	76	37	70
Large-size Firm (%)	61	29	72	41	57	19	55	24	63	30
Manufacturing (%)	69	69	81	86	83	81	65	56	48	41
Non-Manufacturing (%)	31	31	19	14	23	19	35	44	52	59
Macro Economic Condition (All Periods)										
GDP Growth	6.82%									
Lagged GDP Growth	5.74%									
Unemployment	3.16%									
Trade Balance	3.74 billion dollars									
Labor Productivity	11.4%									

in Korea. In addition, it may be consistent with the fact that Korean unionism has been dominated by male workers.

The education level is not considerably different between the two sectors, while the levels of experience and tenure are higher in the union sector than the nonunion sector. In particular, longer tenure in the union sector indicates that unionized workers enjoy better job security. The descriptive statistics also show that Korean unions concentrate on the large-size firm sector; 61 percent of unionized firms are large-size ones with 500 employees or more, while the proportion of large size firms in the nonunionized sector is only 29 percent. Manufacturing and non-manufacturing industries compose 67 and 33 percent of the sample, respectively. Appendix 3.1 provides the detailed explanation about this sample.

APPENDIX 3.1

Descriptive Statistics by Union and Non-Union Sector

	As a Whole		Union Sector		Non-Union Sector	
	Mean	SD	Mean	SD	Mean	SD
	(N= 355,974)		*(N=233,888)*		*(N=122,086)*	
Dependnent Variables						
Hourly Wage (Real Wage)	4685.69	3428.54	5024.03	3498.32	4037.53	3192.08
log Wage	8.24	0.65	8.33	0.62	8.07	0.66
Individual Characterisitics						
Union (0-1)[1]	0.66	0.48				
Age	33.26	10.31	33.61	9.87	32.79	11.10
Female (0 - 1)	0.33	0.47	0.29	0.46	0.39	0.49
Marital Status (0 - 1)	0.62	0.48	0.65	0.48	0.58	0.49
Education (year)	11.23	2.62	11.23	2.54	11.22	2.76
Experience (year)	5.77	3.60	6.21	3.55	4.94	3.54
Tenure (year)	5.01	5.30	5.92	5.67	3.28	3.98
Skill Level_1 (0-1)	0.66	0.47	0.64	0.48	0.71	0.45
Skill Level_2 (0-1)	0.13	0.02	0.15	0.36	0.10	0.30
Skill Level_3 (0-1)	0.03	0.03	0.03	0.17	0.03	0.17
Skill Level_4 (0-1)	0.09	0.09	0.10	0.30	0.07	0.26
Skill Level_5 (0-1)	0.02	0.02	0.02	0.13	0.01	0.11
Skill Level_6 (0-1)	0.00	0.00	0.00	0.05	0.00	0.05
Skill Level_7 (0-1)	0.06	0.06	0.06	0.23	0.07	0.26
Employers' Characteristics						
Blue Collar (0-1)	0.74	0.44	0.76	0.42	0.70	0.46
White Collar (0-1)	0.08	0.26	0.07	0.26	0.08	0.27
Service Work (0-1)	0.06	0.23	0.05	0.21	0.07	0.25
Expert (0-1)	0.13	0.34	0.11	0.32	0.16	0.37
Firm Scale_1 (0-1)	0.12	0.32	0.03	0.18	0.27	0.44
Firm Scale_2 (0-1)	0.20	0.40	0.16	0.37	0.28	0.45
Firm Scale_3 (0-1)	0.18	0.39	0.19	0.39	0.16	0.37
Firm Scale_4 (0-1)	0.50	0.50	0.61	0.49	0.29	0.46
Industry_1 (0-1)	0.02	0.13	0.03	0.16	0.00	0.05
Industry_2 (0-1)	0.00	0.04	0.00	0.05	0.00	0.03
Industry_3 (0-1)	0.00	0.05	0.00	0.05	0.00	0.06
Industry_4 (0-1)	0.04	0.20	0.04	0.21	0.04	0.19
Industry_5 (0-1)	0.01	0.07	0.01	0.09	0.00	0.00
Industry_6 (0-1)	0.09	0.28	0.08	0.28	0.09	0.29
Industry_7 (0-1)	0.04	0.20	0.02	0.15	0.08	0.26
Industry_8 (0-1)	0.00	0.08	0.00	0.07	0.01	0.11

Descriptive Statistics by Union and Non-Union Sector - Cont'd

Industry_9 (0-1)	0.03	0.17	0.03	0.16	0.04	0.19
Industry_10 (0-1)	0.01	0.09	0.01	0.09	0.01	0.08
Industry_11 (0-1)	0.01	0.11	0.01	0.12	0.01	0.09
Industry_12 (0-1)	0.01	0.11	0.01	0.11	0.01	0.11
Industry_13 (0-1)	0.01	0.10	0.01	0.09	0.01	0.11
Industry_14 (0-1)	0.04	0.20	0.05	0.21	0.03	0.17
Industry_15 (0-1)	0.04	0.19	0.04	0.19	0.03	0.18
Industry_16 (0-1)	0.02	0.14	0.02	0.15	0.02	0.13
Industry_17 (0-1)	0.03	0.17	0.03	0.16	0.03	0.18
Industry_18 (0-1)	0.03	0.16	0.02	0.15	0.03	0.17
Industry_19 (0-1)	0.17	0.37	0.17	0.37	0.17	0.38
Industry_20 (0-1)	0.04	0.20	0.05	0.22	0.02	0.14
Industry_21 (0-1)	0.01	0.11	0.01	0.10	0.01	0.12
Industry_22 (0-1)	0.03	0.18	0.03	0.19	0.03	0.16
Industry_23 (0-1)	0.01	0.11	0.02	0.13	0.00	0.04
Industry_24 (0-1)	0.03	0.17	0.02	0.13	0.05	0.23
Industry_25 (0-1)	0.01	0.12	0.01	0.10	0.02	0.15
Industry_26 (0-1)	0.01	0.09	0.01	0.07	0.01	0.11
Industry_27 (0-1)	0.02	0.13	0.02	0.13	0.02	0.14
Industry_28 (0-1)	0.07	0.25	0.09	0.29	0.01	0.12
Industry_29 (0-1)	0.01	0.06	0.01	0.07	0.00	0.06
Industry_30 (0-1)	0.01	0.07	0.01	0.07	0.00	0.06
Industry_31 (0-1)	0.01	0.09	0.01	0.09	0.01	0.08
Industry_32 (0-1)	0.01	0.11	0.02	0.13	0.00	0.03
Industry_33 (0-1)	0.01	0.08	0.01	0.09	0.01	0.07
Industry_34 (0-1)	0.00	0.06	0.01	0.07	0.00	0.04
Industry_35 (0-1)	0.01	0.11	0.01	0.10	0.02	0.14
Industry_36 (0-1)	0.04	0.20	0.02	0.15	0.07	0.26
Industry_37 (0-1)	0.07	0.25	0.06	0.24	0.07	0.26
Industry_38 (0-1)	0.01	0.08	0.01	0.08	0.01	0.08
Industry_39 (0-1)	0.00	0.06	0.02	0.04	0.01	0.08
Macro-Economic Trends						
GDP (% of Increase)	6.82	4.53				
GDP_1 (1 year lagged, %))	5.74	4.94				
Unemployment (%)	3.16	1.61				
Trade Balance (billiion dollars)	3.74	16.46				
Labor Productivity (% of Increase)	11.40	2.32				
Resistance	366.28	146.95				

APPENDIX 3.2

Variables Description in the Micro Data Analysis

Variables	Description and Source
Dependent Variables	
log Wage	Natural logarithm of hourly wage (real term) Hourly wage is calculated by (base pay + allowance + overtime pay + bonus) ÷ total work time, and it is adjusted by CPI (1995 = 100) to be real terms.
Union[98]	Dummy, 1, if individual is belonging to unionized establishment 0, otherwise
Explanatory Variables	
1. Personal Characteristics	
Age	Age of individual workers
Marital Status	Dummy, 1 if married, 0 otherwise
Education	Education level completed by individual workers (five scale) is converted to year of education. (1) Primary school = 6 year (2) Middle school = 9 year (3) High school = 12 year (4) Junior college = 14 year (5) University = 16 year
Experience	Post-schooling years of experience (five scale) is converted to year of Experience by median value (1) Less than 1 year = 1 year (2) 1 – 2 years = 1.5 year (3) 3 – 4 years = 3.5 year (4) 5 – 9 years = 7.5 year (5) 10 years = 10 year
Tenure	Years of service in the same firm
Skill[99]	
Skill Level_1	No Skill Certificates
Skill Level_2	With Other Skill Certificates
Skill Level_3	With Certificate of Craftsman, 1st level
Skill Level_4	With Certificate of Craftsman, 2nd level
Skill Level_5	With Certificate of Craftsman, 3rd level
Skill Level_6	With Certificate of Engineer
Skill Level_7	With Certificate of Technician

[98] It is also independent variable.

[99] The skill level is classified by certificates for skill which is regulated by the law in Korea. Skill level_7 indicates the highest level of skill.

Occupation	
Ocp_1	Blue Collar Work
Ocp_2	White Collar Work
Ocp_3	Service Work
Ocp_4	Experts
Firm Size	
Firm_1	Establishment which hire 99 employees or less
Firm_2	Establishment which hire between 100 and 299 employees
Firm_3	Establishment which hire between 300 and 499 employees
Firm_4	Establishment which hire 500 employs or more
Industry[100]	3-digit standard industry category according to Korean Standard Industrial Classification (KSIC)
2. Macro Economy Variables	
GDP_1	Lagged GDP growth rate, percent (The KLI, 2000)
Unemployment	Unemployment Rate, percent (The KLI, 2000)
Trade Balance	Trade Balance, billion dollars (The Bank of Korea, each year)
Labor Productivity	Labor Productivity growth per capita, percent (The KLI, 2000)
3. Labor Politics Variables	
Partial Liberalization (Politics I)	Dummy, 1 if 1987 ≤year ≤1989, 0 otherwise.
Resumed Repression (Politics II)	Dummy, 1 if 1990 ≤year ≤1992, 0 otherwise
Marketism (Politics III)	Dummy, 1 if 1993 ≤year ≤1997, 0 otherwise
Neo-liberalism (Politics IV)	Dummy, 1 if 1998 ≤year ≤1999, 0 otherwise
Union* Politics I	Interaction Terms
Union* Politics II	
Union* Politics III	
Union *Politics IV	
Employer's Resistance	Unfair Labor Practice, the number of appealed incidence (Year Book of Labor Statistics, the Ministry of Labor, each year)

[100] 39 industries are listed in appendix.

APPENDIX 3.3

Variables Description in the Aggregate Data Analysis

Variables	Description
Dependent Variables	
log Wage	Natural logarithm of hourly mean wage of 39 (or 10) industries (real term)
Unionization[101]	Proportion of union coverage in industry *i*.
Explanatory Variables	
1. Personal Characteristics	
Age	Average Age of individual workers in the relevant industry
Marital Status	Proportion of married person in the relevant industry
Education	Average year of education completed in the relevant industry
Experience	Average of Post-schooling years of experience in the relevant industry
Tenure	Average Years of service in the same firm in the relevant industry
Skill	Proportion of each levels of skill based on certifications
Occupation	
Ocp_1	Proportion of Blue Collar Work in the relevant industry
Ocp_2	Proportion of White Collar Work in the relevant industry
Ocp_3	Proportion of Service Work in the relevant industry
Ocp_4	Proportion of Experts in the relevant industry
2. Employers' Characteristics	
Firm Size	
Firm_1	Proportion of Establishment which hire 99 employees or less
Firm_2	Proportion of Establishment which hire between 100 and 299 ees
Firm_3	Proportion of Establishment which hire between 300 and 499 ees
Firm_4	Proportion of Establishment which hire 500 employs or more
Industry	The list of 39 industries is appended
3. Macro Economic Variables	Identical to Micro Data Set
4. Labor Politics Variables	Identical to Micro Data Set

[101] It is also independent variable.

APPENDIX 3.4

List of 39 Industries

Observation	*Industries*
Industry_1	Mining of Coal and Lignite: Extraction of Peat
Industry_2	Mining of Metal Ores
Industry_3	Other Mining and Quarrying
Industry_4	Production, processing and preservation of meat, fish, and fruit
Industry_5	Manufacture of Tobacco Products
Industry_6	Spinning, Weaving and Finishing of Textiles; Reclining
Industry_7	Manufacture of Wearing Apparel, Except Fur Apparel
Industry_8	Dressing and Dyeing of Fur
Industry_9	Manufacture of footwear
Industry_10	Manufacture of Wood and Production of Wood and Cork
Industry_11	Manufacture of Furniture
Industry_12	Manufacture of Pulp, Paper, and Paper Products
Industry_13	Publishing, Printing and Reproduction of Recorded Media
Industry_14	Manufacture of Coke, Refined Petroleum Products and Nuclear; Manufacture of Chemicals and Chemical Products
Industry_15	Manufacture of Rubber and Plastics Products
Industry_16	Manufacture of other non-metallic mineral products
Industry_17	Manufacture of Basic Metals
Industry_18	Manufacture of Fabricated Metal Products, except Machinery.
Industry_19	Manufacture of Machinery and Equipment; Manufacture of Office, Accounting and Computing Machinery; Manufacture of Electrical Machinery and Apparatus Manufacture of Radio, Television, and Communication Equipments
Industry_20	Manufacture of Other Transport Equipment
Industry_21	Manufacture of Medical, Precision and Optical Instruments
Industry_22	Manufacture of Motor Vehicles, Trailers and Semi-trailers
Industry_23	Electricity, Gas, Steam, and Hot Water Supply
Industry_24	Construction
Industry_25	Sale, Maintenance and Repair of Motor Vehicles and Motorcycles; Wholesale trade and Commission Trade, Except of Motor Vehicle Other Whole Sale
Industry_26	Retail Trade, Except of Motor Vehicle and Motorcycles; Repair
Industry_27	Hotels and Restaurants
Industry_28	Land Transport; Transport via Pipelines
Industry_29	Water Transport
Industry_30	Air Transport
Industry_31	Supporting and Auxiliary Transport Activities
Industry_32	Post and Courier Activities
Industry_33	Financial Intermediation, Except Insurance and Pension Fund
Industry_34	Insurance and Pension Funding, Except Compulsory Social Security
Industry_35	Real Estate Activities Renting of Machinery and Equipment Without Operator
Industry_36	Other Business Activities; Sewage and Refusal Disposal, Sanitation and Similar Activities
Industry_37	Education; Health and Social Work; Activities of Membership Organization
Industry_38	Recreational, Cultural and Sporting Activities
Industry_39	Other Service Activities

CHAPTER FOUR

DYNAMISM OF UNION BARGAINING POWER AND LABOR POLITICS: FINDINGS AND ANALYSIS

4.1 Introduction

This chapter discusses the empirical outcomes regarding the relationship between union bargaining power and the labor politics in Korea. Prior to the main analysis and discussion, it may be useful to briefly explain the general strategy, as the econometric models with a large number of explanatory variables may distract our attention.

This analysis proceeds with intensive stress on the relation of union density, unionism, and labor politics rather than comprehensive approaches to the general structure of wage determination. Thus, the first emphasis will be placed on the variables of my primary interest, unionism and labor control politics. The changing pattern of union wage effects in association with different labor politics must be carefully examined in order to illuminate how labor controls affect union bargaining power.

Second, this chapter will note how macro economic variables, as important controls, adjust the returns to unions through controlling the coincident effects of the market conditions on wages.

Third, conventional variables including personal attributes, labor market experience, and other employers' characteristics will be briefly explained by comparing them with the findings of prior studies in Korea.

Fourth, discussion is mainly based on the improved models allowing for heterogeneity and simultaneity, while conventional OLS models are utilized as a reference for comparison.

This chapter first reports aggregate panel data estimation and analysis of the industry-wide impact of union density in Korea. Then, individual wage effects of unions will be analyzed with the empirical output of the micro data analysis.

4.2. Aggregate Panel Analysis: Union Density Effect on Industry Wage

Initial Estimation with Conventional OLS

The aggregate panel analysis is concerned with the macro effect of union density on industry wages, which is captured by the coefficient on unionization. Model I contains only conventional explanatory variables without controls for the labor politics and market conditions. As illustrated in Table 4.1, the coefficient on unionization is 0.3 with large t-statistics and a high level of significance. With controls of macro economic conditions in Model II, it decreased to 0.24, which suggests that the positive coincident effects of economic conditions on wages cause an overestimation in Model I. Model III shows the relationship between union density effects and labor politics. First, with large t-statistics and significance of 1 % level, the coefficient on unionization is 0.36 under the partial liberalization policy. It suggests that the union density effect in an industry with 10 percent of the workers organized is likely to be about 3.6 percentage points higher than in a nonunionized industry.

Table 4.1. Initial Estimation: Wage Effect of Unionization

	OLS		
	Model I	Model II	Modell III
Unionization	0.301	0.235	0.357
	(0.061)**	(0.054)**	(0.063)**
Unionization*Politics II			-0.231
			(0.084)**
Unionization*Politics III			-0.342
			(0.077)**
Unionization*Politics IV			-0.42
			(0.093)**
Macro Economy Variables			
Lagged GDP		0.012	0.013
		(0.003)**	(0.003)**
Labor Productivity		0.013	0.012
		(0.004)**	(0.004)**
Trade Balance		-0.017	-0.007
		(0.002)**	(0.002)**
Unemployment		0.186	0.118
		(0.021)**	(0.040)**
Labor Politics Variables			
Politics II			0.323
			(0.063)**
Politics III			0.614
			(0.062)**
Politics IV			0.517
			(0.148)**
Conventional Variables			
Age	0.046	0.017	-0.009
	(0.005)**	(0.005)**	(0.005)
Female	-0.325	-0.493	-0.526
	(0.078)**	(0.067)**	(0.059)**
Marital Status	-0.874	-0.375	-0.004
	(0.186)**	(0.160)*	(0.139)
Education	0.136	0.075	0.019
	(0.016)**	(0.015)**	(0.013)
Experience	0.158	0.25	0.268
	(0.077)*	(0.066)**	(0.059)**
$Experience^2$	-0.011	-0.022	-0.021
	(0.006)	(0.005)**	(0.005)**
Tenure	0.086	0.085	0.053
	(0.021)**	(0.018)**	(0.016)**
$Tenure^2$	-0.002	-0.001	0
	(0.001)**	(0.001)*	(0.001)

Table 4.1. Initial Estimation: Wage Effect of Unionization-Cont'd

	OLS		
	Model I	Model II	Modell III
White Collar	0.403	0.426	0.495
	(0.108)**	(0.097)**	(0.085)**
Service Work	-0.281	-0.03	0.186
	(0.059)**	(0.052)	(0.047)**
Expertise	0.332	0.439	0.396
	(0.111)**	(0.095)**	(0.081)**
Skill Level 2	0.13	0.125	0.19
	(0.054)*	(0.053)*	(0.046)**
Skill Level 3	-0.238	-0.247	-0.168
	(0.13)	(0.129)	(0.116)
Skill Level 4	0.064	0.013	0.087
	(0.109)	(0.096)	(0.084)
Skill Level 5	0.801	0.352	0.558
	(0.317)*	(0.287)	(0.252)*
Skill Level 6	-1.662	-2.235	-1.998
	(1.425)	(1.204)	(1.036)
Skill Level 7	-0.197	-0.205	0.056
	(0.12)	(0.11)	(0.094)
Firm Size 2	0.109	0.009	-0.106
	(0.099)	(0.084)	(0.072)
Firm Size 3	-0.03	-0.026	-0.084
	(0.092)	(0.08)	(0.068)
Firm Size 4	0.01	0.025	0.053
	(0.077)	(0.066)	(0.056)
Constant	4.85	5.485	6.547
	(0.297)**	(0.257)**	(0.265)**
N	505	505	505
R^2	0.8	0.86	0.9

Note: (1) Standard errors in parentheses
*(2) * $p<0.05$; ** $p<0.01$*

For example, manufacturing workers who are in an industry that is 46 percent organized in our sample earn 17 percent more than comparable workers who are in non-organized industries.[102] The interaction terms of unionization and labor politics capture the impact of different labor control regimes on the union density effect. As labor controls are negatively associated with the density effect on wage, the density effect declined to 0.13, 0.02, and – 0.06 coefficient, in the regime of authoritarian repression, market-oriented controls, and neo-liberalism, respectively.[103] The negative coefficient in the neo-liberal control regime indicates that workers in highly organized sectors earn less than those who are in less unionized sector.[104]

The changing pattern of union density effects in association with different labor control regimes is the primary concern of this study. An F-test between the coefficients on interaction terms is applied to verify whether each control strategy has a different impact or not. That is, our null hypothesis is that the coefficients on these interaction terms do not differ from each other;

(1) Unionization*Authoritarian Repression = Unionization*Market-oriented Controls

(2) Unionization*Authoritarian Repression = Unionization*Neo-liberal Controls.

The test result cannot reject the null of no inter-difference between the interaction terms even at a 10 % test;

$$F\,(2,\ 473) = 1.99$$
$$Prob > F = 0.1380.$$

It implies that there is no statistically significant difference in the impact on unionization between the consequent three different labor control strategies in 1990s. In other words,

[102] (0.46*0.36)*100 = 16.56 (%).

[103] Hereinafter, Politics I, Politics II, Politics III, and Politics IV will refer to partial liberalization, authoritarian repression, market-oriented controls, and neo-liberal controls, respectively.

[104] In the same example of manufacturing worker, they earn 3 percent [(0.46*-0.06)*100] less than comparable workers in non-unionized sectors.

the effectiveness of each controls is not distinguished in this initial estimation. Although initial estimations suggest the negative impact of the labor control policies on the macro effects of unionization in Korea, these results are less believable due to the bias of the OLS estimates. We turn to the fixed effects model.

Correcting Heterogeneity: the Fixed versus Random Effects

Both the FE and the RE are alternatives to improve the initial estimation via the OLS method which may be biased and inefficient due to unobserved industry heterogeneity. As described in Chapter III, I run the Hausman specification test to determine which is the fittest model. Rejecting the null hypothesis that the OLS and the GLS estimates are not distinguished from zero, the Hausman test shows the FE model meets a goodness-of-fit measure;[105]

$$Chi\text{-}square\ (31) = 401.68$$
$$Prob > chi\text{-}square = 0.0000.$$

It implies that the unobserved industry fixed effects are correlated with the other regressors, so that the random effect treatment is inconsistent due to omitted variables (Hausman and Taylor, 1981; cited in Greene, 1997). With controls for industry fixed effects, the FE model adjusts downward the coefficients on unionization and interaction terms with the labor politics. As illustrated in Table 4.2, the unionization coefficient capturing the macro effect of union density decreased to one-half, 0.17, which indicates that the union density effect in the initial estimation with OLS is upward-biased due to the omitted industry fixed effects.

[105] Hausman test results are in Appendix 4.1.

Table 4.2. Correction for Heterogeneity and Wage Effect of Unionization

	The Fixed Effect Estimate (Model IV)
Unionization	0.171
	(0.060)**
Unionization*Politics II	-0.216
	(0.069)**
Unionization*Politics III	-0.155
	(0.068)*
Unionization*Politics IV	-0.22
	(0.082)**
Macro Economic Variables	
Lagged GDP	0.018
	(0.003)**
Labor Productivity	0.011
	(0.003)**
Trade Balance	-0.007
	(0.001)**
Unemployment	0.14
	(0.033)**
Labor Politics Variables	
Politics II	0.333
	(0.053)**
Politics III	0.497
	(0.056)**
Politics IV	0.382
	(0.123)**
Conventional Variables	
Age	0.004
	(0.005)
Female	-0.372
	(0.078)**
Marital Status	0.05
	(0.135)
Education	0.081
	(0.016)**
Experience	0.194
	(0.054)**
$Experience^2$	-0.016
	(0.004)**
Tenure	0.088
	(0.018)**
$Tenure^2$	-0.003
	(0.001)**

Table 4.2. Correction for Heterogeneity and Wage Effect of Unionization-Cont'd

	The Fixed Effect Estimate (Model IV)
White Collar	0.097
	(0.089)
Service Work	0.028
	(0.061)
Expertise	-0.015
	(0.08)
Skill Level 2	0.141
	(0.058)*
Skill Level 3	-0.16
	(0.096)
Skill Level 4	0.095
	(0.082)
Skill Level 5	0.489
	(0.214)*
Skill Level 6	-0.67
	(0.875)
Skill Level 7	0.256
	(0.132)
Firm Size 2	0
	(0.073)
Firm Size 3	0.034
	(0.074)
Firm Size 4	0.049
	(0.064)
Constant	5.664
	(0.283)**
N	505
Number of industry	39
R^2	0.9

Note: (1) Standard errors in parentheses
*(2) * $p<0.05$; ** $p<0.01$*

The coefficients on the interaction terms also changed to – 0.22 (authoritarian repression), – 0.16 (market-oriented controls), and – 0.22 (neo-liberalism). These parameters suggest that the positive union density effect was removed by the ongoing shifts in the labor control strategies of the government and the union density effects are negative after the liberalization regime.

The pattern of union density effect does not, however, significantly differ in relation to the labor politics. An F-test for the inter-difference between the impacts of the interaction terms[106] does not reject the null of no inter-difference as in Model III, which suggests that both market-oriented controls and neo-liberalism have little significantly different impact from authoritarian repression.

Correction for Simultaneity and Unionization

With a 2SLS approach, Model V, the complete model in the aggregate panel analysis, allows for simultaneity between wage determination and unionization. Table 4.3 presents the 2SLS estimates of the proposed simultaneous equation system. It does not involve the reduced form equation of unionization since the reduced form equation is not a structural model in this study.[107] Compared to the OLS estimates, the coefficients on unionization and the interaction terms are adjusted downwards, which indicates that the OLS method overestimates the return to unionization due to upward simultaneity bias.

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[106] F (2, 435) = 0.73, Prob > F = 0.5372

[107] The first equation (i.e. unionization equation) in this simultaneous system is reduced form, the coefficients of which cannot be directly interpreted as partial effects. Rather, the reduced form of unionization can be calculated by substituting the structural wage equation into structural unionization equation. Belman discusses it in detail with the notion of total effect (See, Belman (1988) for further discussion). This is not of primary interest in this study so that it is omitted. Rather, it is noteworthy that the coefficient of resistance/avoidance is not zero with high level of significance on 1% test in Appendix 4.2, which means that the identifier satisfies rank conditions and so the wage equation in a SME is well identified. For the convenience of the reader, the first equation will be reported in Appendix 4.2.

Table 4.3. Correction for Simultaneity and Wage Effect of Unionization

	2SLS with Logistic Transformation (Model V)
Predicted Unionization	0.339
	(0.123)**
Predicted Unionization*Politics II	-0.2
	(0.071)**
Predicted Unionization*Politics III	-0.182
	(0.071)*
Predicted Unionization*Politics IV	-0.218
	(0.085)*
Labor Politics Variables	
Politics II	0.295
	(0.055)**
Politics III	0.484
	(0.057)**
Politics IV	0.364
	(0.122)**
Macro Economic Variables	
Lagged GDP	0.015
	(0.003)**
Unemployment	0.139
	(0.033)**
Trade Balance	-0.008
	(0.001)**
Labor Productivity	0.011
	(0.003)**
Conventional Variables	
Age	0.005
	(0.005)
Female	-0.353
	(0.079)**
Marital Status	0.062
	(0.136)
Education	0.084
	(0.016)**
Experience	0.185
	(0.054)**
$Experience^2$	-0.016
	(0.004)**
Tenure	0.08
	(0.018)**
$Tenure^2$	-0.003
	(0.001)**

Table 4.3. Correction for Simultaneity and Wage Effect of Unionization - Cont'd

	2SLS with Logistic Transformation (Model V)
White Collar	0.123
	(0.09)
Service Work	0.044
	(0.062)
Expertise	0.032
	(0.085)
Skill Level 2	0.151
	(0.058)*
Skill Level 3	-0.195
	(0.098)*
Skill Level 4	0.085
	(0.083)
Skill Level 5	0.427
	(0.217)*
Skill Level 6	-0.698
	(0.877)
Skill Level 7	0.223
	(0.132)
Firm Size 2	-0.038
	(0.076)
Firm Size 3	-0.069
	(0.099)
Firm Size 4	-0.026
	(0.079)
Industry Dummy	Yes
Constant	6
	(0.277)**
N	505
R^2	0.94

Note: (1) Standard errors in parentheses
*(2) * $p<0.05$; ** $p<0.01$*

As shown in Table 4.3, the liberalization politics are associated with a 0.34 coefficient of union density with large t-statistics and significance at a 1% test. The coefficient decreases by 0.20 in the period of authoritarian repression, by 0.18 in that of market-oriented controls, and by 0.22 in neo-liberalism with large t-statistics and high level of significance at 1 % and 5 % levels. It indicates that, despite being somewhat offset by the control regime in the 1990s, the wage effect of union density remains positive over the whole period. For example, the mean wages of the manufacturing industry in our sample are 15.7 percent, 7.2 percent, 6.4 percent, and 3.5 percent higher than non-unionized industries under each labor control regime. Table 4.4 shows the impact of different control regimes on wage premiums.

Table 4.4. Potential Union Wage Premiums of Manufacturing Industry[108]

Labor Politics	Liberalization	Repression	Market-oriented	Neo-liberalism
Coefficients	0.34***	0.14***	0.15**	0.12**
Unionization in Sample (%)	46.2	51.1	42.4	28.9
Wage Premium (%)	15.7	7.2	6.4	3.5

Note: (1) *** and ** is $p < 0.01$ and $p<0.05$, respectively.

With respect to the pattern of the effect of unionization, an F-test on the null in Table 4.5 reveals no statistical inter-difference between the coefficients, which suggests that both the market-oriented control and neo-liberal control regimes differ little in terms of impact from the authoritarian repression on macro influence of unionization, as in the previous models.

Table 4.5. F-test Results for Statistical Difference of Labor Politics Impacts

Null Hypothesis	Unionization*Politics II = Unionization*Politics III Unionization*Politics II = Unionization*Politics IV
F-test Results (Model V)	$F(2, 435) = 0.17$ $Prob > F = 0.8401$

[108] Union wage premium = (coefficient*unionization rate)*100. The wage premium is compared to non-organized industry (i.e., zero percent organization rate). There may be no industry with zero percent density in the real world, so that I call this estimates "potential" wage premium.

Then, should we conclude that the market-oriented control regime including strengthened neo-liberalism is not "substantially" distinguished from the earlier regime of authoritarian repression? To clarify the difference in the impacts of each control strategy, it may be necessary to compare the real wage increases between each period. The coefficients on the labor politics variables capture real wage increases during the relevant time period equated with the labor control regime. As indicated by these parameters in Table 4.3, real wages increased by 30 percent in the period of repression (Labor Politics II) and by 48 percent in the period of market-oriented controls (Labor Politics III).[109] Although real wages almost doubled in the period of Politics III, the effect of union density on industry wage remains at a similar level to the previous period. It implies that the market-oriented control regime was substantially more restrictive on unionism than that of authoritarian repression. During the neo-liberal regime, the real wage declined by 12 percent compared to the previous period, but the wage effect of union density remained relatively strong. It may confirm again that the market-oriented control regime of Kim Young-sam government had a worse impact than even the neo-liberal controls effected during the economic crisis.[110]

As there are no prior works with aggregate approaches in Korea, it is not easy to directly compare the estimates of the other conventional variables. In brief, wage

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[109] As noted in Chapter III, the improved labor market conditions are mainly due to economic recovery helped by expansion of export and domestic consumption. The Korean economy escaped from the earlier recession owing to business recovery of world economy, the appreciation of the Japanese Yen, the swelling domestic private consumption and stable exchange rate (The Bank of Korea, 1994, 1995, 1996).

[110] The declining effect of increasing union density on wage may be reflected on the declining union membership during the 1990s.

Trends of Union Membership in Korea (Source: KLI Statistics 2000)

	'87	'89	'91	'93	'95	'97	'98
Union Membership (%)	18.5	19.8	17.2	15.6	13.8	12.2	12.6

inequality between genders is found in the coefficient on female is negative 0.35, which suggests the wage levels in an industry with a relatively higher portion of female workers is lower than that of industries with fewer female workers. Labor market experience variables such as education, experience, and tenure are positively associated with industry wage, which is consistent with prior works with micro approaches in Korea (Bai, 1991; Park, 1984; Jeong, 1991; Park, 1991; Lee and Kwon, 1995).

4.3. Micro Data Analysis: Individual Wage Effects of Unions

Initial Estimation with Conventional OLS

As noted, the micro approach mainly concerns the impact of unions on individual wages at the micro level. Model VI parallels prior research (e.g., Bai, 1991; Jeong, 1991; Lee and Kwon, 1995) in applying OLS to a model that contains conventional suspects such as labor market experience and employers' characteristics without controlling for the macro effects of labor control policies and economy-wide trends. Consistent with the prior literature, unionism in Model VI has moderate effects on individual wages. The return to unions is estimated to be 7.8 percent (0.075 coefficient) over the whole period[111]. This parallels the findings of prior OLS studies of Korea (e.g. Park, 1984; Bai, 1991; Jeong, 1991; Chae, 1993; Lee and Kwon, 1998).

Similarly, the coefficients on other characteristics are conventional in sign, magnitude, and significance, reflecting the general structure of wage determination in Korea. Female workers earn 27 percent less than otherwise identical male workers. The return to marital status is about 7.6 percent, similar to that in the United States, 8.3

[111] The expected value is calculated by exp (0.075) – 1.

percent (Belman and Monaco, 2001).[112] A one-year increase in education, experience, and tenure increases earning by 5.5, 4.7, and 4.4 percent, respectively,[113] and the latter two increases show curvilinear relations with wages. Wages differ by occupation and the scale of the firm. Korean blue-collar workers earn 23.3 percent less than white-collar workers. The return to firm-scale appears not as large as in the earlier studies; workers in small establishment with fewer than 100 employees earn 9 percent less than those in large-size firms with more than 500 employees.

Adding the macro economic variables in Model VII considerably mediates the wage effect of unions, as in the aggregate panel analysis, but has little effect on other coefficients. The coefficient on unions largely declined to 2.2 percent, one third of the estimated effect of Model VI, which suggests that unions in Model VI are picking up the positive coincident effect of macroeconomic conditions. Coefficients on other individual and employers' characteristics were not substantially changed in sign and magnitude. The addition of macro-economic variables also increases R-squared (from 0.66 to 0.73).

With controls for both economy-wide trends and labor politics, Model VIII captures the shift in individual wage effects in association with labor politics. The return to unions increased to 6 percent under the liberalization regime, but it declined to zero, 1, and 3 percent under authoritarian repression, market-oriented control, and neo-liberal controls, respectively.

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[112] It implies that compensation package is not likely to present family-oriented culture based on strong collectivism in Korea.

[113] Return to education = exp (0.054) –1, return to experience = exp {0.052-(0.003*2)} – 1, return to tenure = exp {0.0449-(0.0007*2)} = 4.4.

Table 4.6. Initial Estimation: Individual Wage Effects of Union

	OLS		
	Model VI	Model VII	Model VIII
Union	0.075	0.022	0.058
	(0.002)**	(0.001)**	(0.003)**
Union*Politics II			-0.058
			(0.004)**
Union*Politics III			-0.049
			(0.003)**
Union*Politics IV			-0.028
			(0.004)**
Labor Politics Variables			
Politics II			0.199
			(0.004)**
Politics III			0.426
			(0.004)**
Politics IV			0.237
			(0.014)**
Macro Economic Variables			
Lagged GDP		0.012	0.021
		(0.000)**	(0.000)**
Labor Productivity		-0.015	0.006
		(0.000)**	(0.000)**
Trade Balance		-0.023	-0.01
		(0.000)**	(0.000)**
Unemployment		0.273	0.183
		(0.001)**	(0.004)**
Conventional Variables			
Age	0.006	0.001	0.001
	(0.000)**	(0.000)**	(0.000)**
Female	-0.248	-0.271	-0.264
	(0.002)**	(0.002)**	(0.001)**
Marital Status	0.073	0.084	0.084
	(0.002)**	(0.002)**	(0.002)**
Education	0.054	0.038	0.035
	(0.000)**	(0.000)**	(0.000)**
Experience	0.052	0.061	0.061
	(0.001)**	(0.001)**	(0.001)**
$Experience^2$	-0.003	-0.004	-0.004
	(0.000)**	(0.000)**	(0.000)**
Tenure	0.045	0.045	0.041
	(0.000)**	(0.000)**	(0.000)**
$Tenure^2$	-0.001	-0.001	-0.001
	(0.000)**	(0.000)**	(0.000)**

Table 4.6. Initial Estimation: Individual Wage Effects of Union - Cont'd

	OLS		
	Model VI	Model VII	Model VIII
White Collar	0.214	0.126	0.107
	(0.003)**	(0.002)**	(0.002)**
Service Work	-0.137	-0.088	-0.065
	(0.003)**	(0.003)**	(0.003)**
Expertise	0.332	0.265	0.232
	(0.003)**	(0.002)**	(0.002)**
Skill Level 2	0.13	0.142	0.142
	(0.002)**	(0.002)**	(0.002)**
Skill Level 3	0.173	-0.011	0.03
	(0.004)**	(0.004)**	(0.003)**
Skill Level 4	0.109	0.061	0.085
	(0.002)**	(0.002)**	(0.002)**
Skill Level 5	0.189	0.043	0.093
	(0.005)**	(0.005)**	(0.004)**
Skill Level 6	0.134	0.022	0.086
	(0.014)**	-0.012	(0.011)**
Skill Level 7	0.09	0.098	0.133
	(0.003)**	(0.003)**	(0.003)**
Firm Size 2	0.031	0.048	0.047
	(0.002)**	(0.002)**	(0.002)**
Firm Size 3	0.071	0.087	0.088
	(0.003)**	(0.002)**	(0.002)**
Firm Size 4	0.084	0.149	0.159
	(0.002)**	(0.002)**	(0.002)**
Constant	7.206	6.976	6.738
Industry Dummy	Yes	Yes	Yes
N	344,386.00	306,239.00	306,239.00
R^2	0.663	0.728	0.749

Note: (1) Standard errors in parentheses
*(2) * $p<0.05$; ** $p<0.01$*

An F-test on these interaction terms asserts that the difference between the impacts of each labor control strategy significantly differs, as reported in Table 4.7.

Table 4.7. F-test Results for Statistical Difference of Labor Politics Impacts

Null Hypothesis	Unionization*Politics II = Unionization*Politics III Unionization*Politics II = Unionization*Politics IV
F-test Results (Model VIII)	F (2, 306169) = 35.71 Prob > F = 0.0000

The estimates parallel prior studies in Korea; Bai (1991) estimates 5.2~8.4 in 1988, which is nearly equated with our estimation in Politics I. Kim and Choi (1996) also report a union wage effect of – 0.3~2 in 1994, similar to our estimation in Politics III. Conventional variables remain unchanged in this model, confirming the structure of wage determination in Korea.

Selection and Union Wage Effect: Treatment Effects Model

As noted, the OLS estimates of the initial estimation may not be free from selection bias. In order to verify selection bias in the initial estimation, I test correlation between two error terms of both the union status equation and the wage equation.[114] Our null hypothesis is that correlation between two error terms, ρ, is zero. A log-likelihood test produces;

$$Chi\text{-}square\ (1) = 423.61$$
$$Prob > Chi\text{-}square = 0.0000.$$

[114] More precisely, union/non-union wage differential with correction for selectivity is

$$E(yi|Ui=1) - E(yi|Ui=0) = \alpha + \rho\sigma[-\phi(wi\gamma)/\Phi(wi\gamma)\{1-\Phi(wi\gamma)\}],$$

where

ϕ is the standard normal density function, and Φ is the standard normal cumulative distribution function. $[-\phi(wi\gamma)/\Phi(wi\gamma)\{1-\Phi(wi\gamma)\}]$ is selectivity term and its coefficient ,$\lambda=\rho\sigma$, is selectivity parameter. ρ indicates correlation between the two error terms in both earning function and union status equation. Our null hypothesis to test the existence of selection is $\rho = 0$. In general, OLS assumes $\rho = 0$ so that it may be biased.

It rejects the null at 1 % test, which suggests that the conventional OLS estimate of union was biased. The negative correlation between two error terms ($\rho = -0.311$) produces the negative coefficient on selection term, – 0.098, with large t-statistics and strong significance at 1% level. It indicates that the OLS estimate of union was biased downward[115] as a result of a negative correlation between union status and omitted variables associated with selection for union status.[116] The downward selection bias may indicate that individual workers in the union sector are less productive than those who are in non-union sector in Korea. In general, as Heckman (1979) points out, a selection bias approach allows for omitted variables simultaneously affecting both union status and wage level such as individual productivity. Thus, controlling for these omitted variables in Model IX produces a more accurate return to unions.

Consistent with the sizable selection bias, the treatment effect model shows that the effects of unions on individual wages have been very sizable since the 1987-democratization in contrast to the findings of prior studies. As shown in Table 4.8,[117] the estimated union wage premium in Model IX increased to 24 percent under the liberalization regime. The authoritarian repression regime is negatively associated with the individual wage effect of unions; the wage premium declined slightly to 17 percent. The wage premium somewhat increased to 19 and 21 percent, under market-oriented controls and neo-liberal controls, respectively. These estimates have large t-statistics as well as a high level of significance at 1 % test.

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[115] Selection term itself is negative so that negative value of selectivity parameter produces positive impact.
[116] In their selection approach model, Kim and Choi (1996) found that the common approach of OLS underestimated the wage effect of union due to the selection bias in Korea.
[117] As noted in aggregate panel analysis, the first equation is not reported in this chapter. For readers' convenience, it is in Appendix 4.3.

Table 4.8. Correction for Self-Selection and Union Wage Effect

	Treatment Effect Model (Model IX)
Union	0.219
	(0.006)**
Union*Politics II	-0.055
	(0.004)**
Union*Politics III	-0.044
	(0.003)**
Union*Politics IV	-0.028
	(0.004)**
Labor Politics Variables	
Politics II	0.183
	(0.012)**
Politics III	0.413
	(0.004)**
Politics IV	0.256
	(0.014)**
Macro Economic Variables	
Lagged GDP	0.021
	(0.002)**
Unemployment	0.178
	(0.004)**
Trade Balance	-0.01
	(0.001)**
Labor Productivity	0.007
	(0.0004)**
Conventional Variables	
Age	0.001
	(0.000)**
Female	-0.259
	(0.007)**
Marital Status	0.084
	(0.008)
Education	0.035
	(0.000)**
Experience	0.062
	(0.004)**
$Experience^2$	-0.004
	(0.000)**
Tenure	0.036
	(0.000)**
$Tenure^2$	-0.001
	(0.000)**

Table 4.8. Correction for Self-Selection and Union Wage Effect - Cont'd

	Treatment Effect Model (Model IX)
White Collar	0.116
	(0.011)**
Service Work	-0.058
	(0.013)**
Expertise	0.246
	(0.012)**
Skill Level 2	0.142
	(0.01)
Skill Level 3	0.031
	(0.017)
Skill Level 4	0.085
	(0.011)
Skill Level 5	0.09
	(0.022)**
Skill Level 6	0.081
	(0.012)**
Skill Level 7	0.133
	(0.003)**
Firm Size 2	-0.004
	(0.003)
Firm Size 3	0.009
	(0.011)**
Firm Size 4	0.063
	(0.004)**
Industry Dummy	Yes
Constant	6.667
Selection	-0.098**
	(0.003)
Roh	-0.311
	(0.009)
Sigma	0.314
	(0.0006)
N	306,239
L	-209,300.27

Note: (1) Standard errors in parentheses
*(2) * $p<0.05$; ** $p<0.01$*

Our primary interest is the pattern of changing wage effects in association with the labor control regimes. A chi-square test for statistical difference between the interaction terms reveals that the impacts of various labor politics differ significantly.

Table 4.9. Chi-square test Results for Statistical Difference of Labor Politics Impacts

Null Hypothesis	Unionization*Politics II = Unionization*Politics III Unionization*Politics II = Unionization*Politics IV
Chi-square Test Results	Chi-squares (69) = 877739.37 Prob > Chi-squares = 0.0000

In other words, the Korean unions were successful in gaining economic well-being under the liberalization period, which is consistent with the aggregate panel analysis. As the government resumed authoritarian repression vis-à-vis the union, union bargaining power was somewhat reduced, but still had a positive impact on individual wages. Despite the adverse impact of both the market-oriented control and neo-liberal regimes, in which increased labor market flexibility threatened the market power of the unions, the Korean unions fulfilled their roles to insulate workers from the adverse labor market conditions. In particular, of interest is that economic gains of the unions were relatively large during the economic crisis in the period of the neo-liberal regime.

With respect to the changing pattern of the union wage effects, two points are noteworthy in association with labor politics and economic conditions. First, the micro data analysis reaffirms the results of the aggregate panel analysis in that the authoritarian repression regime had a more positive relation with union wage premiums than either the market-oriented controls or neo-liberal period. Although the wage gain of unions under the former regime is slightly less than that in the latter two regimes, the unions gained better pay off under repression in terms of relative real wages. As indicated by the

parameters of the labor politics, the real wage increase was as large as 51 percent in the period of market-oriented controls which is more than double the 20 percent increase in the period of repression.[118] The improved labor market condition has mainly been due to economic recovery helped by the expansion of exports and domestic consumption (The Bank of Korea, 1994, 1995, 1996).[119] Despite the high increase of real wages during the periods, the union wage effect moderately increased by 1 percent, from 18 to 19 percent.

In order to compare the substantial bargaining power of the unions in each labor control regime, this study presents an operational index of the relative wage gains of unions which are weighed by increases in real wages by period. The relative wage gain index indicates substantial influence of unions allowing for real wage increases during the relevant periods, which allows us to compare the impacts of each control regime on unionism.

Table 4.10. Relative Wage Gain of Union and Bargaining Power

Labor Politics	Liberalization (1987-89)	Repression (1990-92)	Market-oriented (1993-97)	Neo-liberalism (1998-99)
Individual Effect, % (A)	24	18	19	21
Estimated Real Wage Increase, % (B)	Base period	Δ19.7	Δ50.7	Δ29.7
Relative Wage Gain Index (= A/ B)		0.91	0.37	0.71

Note: Δ indicates increase.
: (A) and (B) are exponentiated values of each coefficient.

As shown in Table 4.10, the relative gain of unions was larger in the authoritarian repression (0.91) than in the period of market-oriented controls (0.37) and neo-liberal controls (0.71). It implies that the market-oriented controls heavily restricted the ability

[118] Each value is exponentiated.
[119] As described in Chapter III, the Korean economy escaped from the earlier recession owing to business recovery of world economy, the appreciation of the Japanese Yen, the swelling domestic private consumption and stable exchange rate (The Bank of Korea, 1994, 1995, 1996).

of unions to share the economic rent of the real wage increase, which parallels the aggregate panel analysis. In particular, despite strengthened neo-liberal trends, unions had better payoff in the fourth period rather than the third period.

What elements are underlying this different pattern of changes in the union wage effect? Two central facts should be recognized. First, the natures of authoritarian repression and market-oriented controls are distinct; the former attempted to delay the political evolution of independent unionism and so tolerated, to some degree, economic accommodation to organized labor, while market-oriented controls were targeted directly to weaken the economic roles of the Korean unions. In addition, the higher level of union wage effects during the period of strengthened neo-liberalism may reflect the sacrifice of employment and job-security during the economic crisis which resulted in increasing earning inequality between the union and non-union sectors.[120]

For further discussion about the changing pattern of union wage effects, this study employs the treatment effect model with a year-dummy in place of a labor control dummy. In econometrical terms, Model IX uses a period dummy to examine the impact of labor controls on union bargaining power, which is limited to show the inner dynamics of the changing union wage effect within each labor control regime. In addition, the year-dummy model has the advantage of allowing for the effects of omitted variables which might be within a period in Model IX. Model X with a year-dummy complements Model IX showing the annual change in the union wage effect, which is consistent with the previous results of Model IX.[121]

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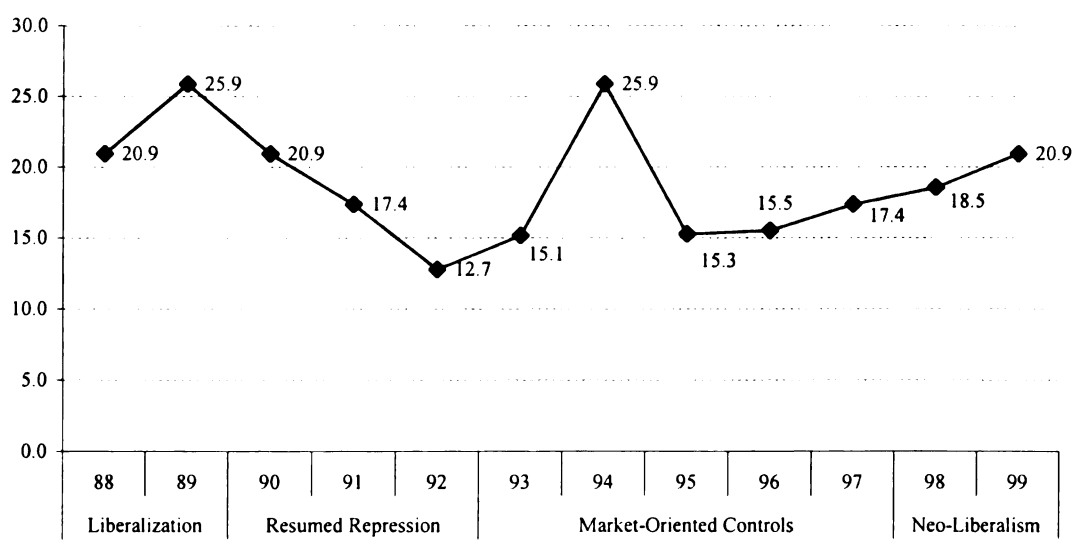
[120] More comprehensive discussion about this issue is reserved for the following Chapter XI with implication in order to concentrate empirical results in this chapter. Chapter XI will combine the changes in labor market during the neo-liberalism with increase in union wage effect.

[121] In a sense, Model X correcting for omitted variables may be caused by the period dummy of Model IX.

More precisely, as illustrated in Table 4.11, the return to unions is ascending from 20.9 in 1987~88 to 25.9 in 1989 during the first period of liberalization.[122] The highest level of union wage effect in 1989 is remarkable because overall real wages even fell steeply by 27 percent in the same year due to the end of favorable conditions in the international market, the so-called three-low prosperity.[123] It implies that the bargaining power of Korean unions was sufficiently strong to protect the economic interests of workers against an economic downturn. With the onset of resumed authoritarian repression in 1990, the returns to union declined to 20.9 in 1990 and then it became 17.4 and 12.8 percent in 1991 and 1992, respectively. During the period of authoritarian repression, union bargaining power continued to decline as shown in Figure 5.1, which indicates the degree of repression strengthened over this period.

Figure 4.1. Annual Changes in Union Wage Effect



[122] The coefficients are statistically distinguished. F-test results are appended.
[123] As described in Chapter III, The three-low refers to low price of oil, low international loan interest, and low value of Korean Won to US Dollar.

Table 4.11. Individual Wage Effects of Union With Year Dummy

	Treatment Effect Model with Year Dummy (Model X)
Union	0.19
	(0.007)**
Union*Year 89	0.038
	(0.006)**
Union*Year 90	-0.005
	(0.005)
Union*Year 91	-0.03
	(0.005)**
Union*Year 92	-0.07
	(0.005)**
Union*Year 93	-0.05
	(0.005)**
Union*Year 94	0.039
	(0.005)**
Union*Year 95	-0.048
	(0.005)**
Union*Year 96	-0.046
	(0.005)**
Union*Year 97	-0.034
	(0.005)**
Union*Year 98	-0.024
	(0.005)**
Union*Year 99	0.0007
	(0.0049)
Year	
Year 89	-0.247
	(0.005)**
Year 90	0.011
	(0.004)*
Year 91	0.022
	(0.005)**
Year 92	0.059
	(0.004)**
Year 94	0.142
	(0.005)**
Year 95	0.178
	(0.004)**
Year 97	0.37
	(0.006)**
N	306,239
Log-Likelihood	-206295.83

Note: (1) Standard errors in parentheses

(2) * $p<0.05$; ** $p<0.01$

(3) Base period is 1987~88; year 93, 96, 98, and 99 are dropped due to multi-collinearity.

(4) The coefficients of other variables are reported in appendix.

The union wage effect increased to 15 percent in the first year of the market-oriented controls, and it became 25.9 percent in the following year which may have been helped by a prosperous economic cycle. Then the wage effect stayed between 15 and 17 percent during the same control period. A comparison of annual changes in the union wage effect between the period of authoritarian repression and market-oriented controls reaffirms the finding that unions' payoff is better in the former than in the latter. Although the average wage effect of union was the same level between the two labor control regimes (about 17 percent), the relative wage gain of unions weighted by the real wage clearly shows the above fact.

Table 4.12. Relative Wage Gain of Union By Year

Labor Controls	Liberalization			Repression		Market-oriented Controls		
Year	'87~'88	'89	'90	'91	'92	'94	'95	'97
Wage Effect, % (A)	20.9	25.9	20.9	17.4	12.7	25.9	15.3	17.4
Estimated Real Wage Increase, % (B)	Base Period	- 28	1	2	6	15	19	44
Relative Wage Gain Index (A/B)		*	20.9	8.7	2.1	1.7	0.8	0.4

Note: (1) * refers to the highest relative wage gain.
(2) (A) and (B) are exponentiated values.

As shown in Table 4.12, the relative wage gain index each year reveals that unions in the repression regime had higher real wage earnings than in the period of market-oriented controls, which is a similar pattern to that produced in Model X. Under the neo-liberal controls, the wage effect of union increased to 18.1 in 1998 and 20.9 percent in 1999, which is consistent with the results of the previous Model IX. As described before, the increase in union wage effect indicates that the economic crisis continued to increase the earning inequality between union and non-union sectors.[124]

[124] This will be further discussed in Chapter V.

The remaining coefficient estimates are conventional in sign and significance and parallel those of prior studies in Korea.[125] Women are estimated to earn 30 percent less than comparable male workers. Labor market experience is positively associated with wage increases; an additional year of education produces about a 3.4 percent increase, while a year of additional experience increases the wage by 6 percent. T-statistics remain unchanged. As expected, experience and tenure have a curvilinear function with wage. Occupational wage differentials are unaffected by controlling for selection. Likewise, few changes are found in the return to the scale of firm and industry. With respect to the return to the scale of firm, the treatment model allowing for selection produces new evidence different from prior OLS studies; the return to large-scale firm with more than 500 employees is 8.7 percent compared to small-size firms with fewer than 100 employees. This contrasts Jeong's (1991) finding of about a 20 percent wage gap between the large-size and small-and medium-sized firms. Arguably, the overestimated effect of firm-size in OLS estimates may result from unmeasured individual productivity because firm-size variables were capturing individual productivity effects and are also related to employee selection.[126] In other words, high wage premiums in large-size establishments should be attributed to individual productivity rather than the scale-effect in itself. This is consistent with the U.S. literature which finds that due to the capital-skilled labor complimentary, large firms hire more highly skilled employees.

[125] The discussion about the remaining coefficient is limited to Model IX since Model X with year dummy has a similarity in sign and magnitude.

[126] For example, large-size firms with high dependence on capital and technology tend to select more productive employees.

4.4. Summary

Consistent with the concerns that labor politics affects union bargaining power, the empirical outcomes of both the aggregate panel and the micro approach are shedding light to dynamism of the union bargaining power in association with the labor politics in Korea.

Table 4.13. Macro and Individual Effects of Unionism

Labor Politics	Liberalization	Repression	Marketism	Neo-liberalism
Macro Effect (Coefficient)	0.34***	0.14***	0.15**	0.12**
Individual Effect (%)	24***	18***	19***	21***

Note: *** and ** is significant at 1 % and 5% level, respectively.

Table 4.13 summarizes the macro and micro effects of Korean unionism during the different periods of the labor politics. As noted, both approaches quantitatively illuminate two important aspects of union bargaining power. The aggregate analysis stresses the impact of the union density on industry mean wages. The macro impact of the union density demonstrates unions' market power which is a foundation underlying the bargaining power. As Freeman and Medoff (1981) emphasize, the union density is positively associated with bargaining power through the market processes; that is, greater union coverage, low the elasticity of demand for the product of unionized firms, reduces the substitutability between labor and other production factors. On the other hand, the micro effects of unions depend on the power relations within the politics of workplace industrial relations involving the market power.

The combined macro and micro effects assert that Korean unionism has sustained strong bargaining power. Despite somewhat slack in the union density since 1990 the macro effect of union density sustained positive and strong. It indicates that the unions

have still effective market power. On the basis of positive market power, the unions also retain an ability to influence the politics of industrial relations at the workplace level.

APPENDIX 4.1

Hausman Specification Test Results

Dep. Variable: log Wage	Fixed Effects	Random Effects	Difference
Unionization	0.171	0.317	-0.146
Unionization*Politics II	-0.216	-0.214	-0.001
Unionization*Politics III	-0.155	-0.275	0.120
Unionization*Politics IV	-0.220	-0.368	0.149
Politics II	0.333	0.314	0.019
Politics III	0.497	0.562	-0.064
Politics IV	0.382	0.455	-0.073
Lagged GDP	0.018	0.014	0.004
Trade Balance	-0.007	-0.007	0.000
Labor Productivity	0.011	0.011	0.000
Unemployment	0.140	0.124	0.016
Age	0.004	-0.003	0.007
Female	-0.372	-0.455	0.083
Marital Status	0.050	0.041	0.010
Education	0.081	0.046	0.034
Experience	0.194	0.248	-0.053
$Experience^2$	-0.016	-0.020	0.003
Tenure	0.088	0.055	0.033
$Tenure^2$	-0.003	0.000	-0.003
White Collar Work	0.097	0.389	-0.292
Service Work	0.028	0.140	-0.112
Expertise	-0.015	0.232	-0.247
Skill Level 2	0.141	0.173	-0.032
Skill Level 3	-0.160	-0.170	0.010
Skill Level 4	0.095	0.114	-0.019
Skill Level 5	0.489	0.580	-0.091
Skill Level 6	-0.670	-1.601	0.931
Skill Level 7	0.256	0.116	0.140
Firm-size 2	0.000	-0.079	0.079
Firm-size 3	0.034	-0.066	0.099
Firm-size 4	0.049	0.052	-0.003
Test Results:	chi2(31) = 401.68		
	Prob>chi2 = 0.0000		

APPENDIX 4.2

Correction for Simultaneity and Wage Effect of Unionization

	2SLS with Logistic Transformation (Model V)	
	Unionization Equation	Wage Equation
Predicted Unionization		0.339
		(0.123)**
Predicted Unionization*Politics II		-0.2
		(0.071)**
Predicted Unionization*Politics III		-0.182
		(0.071)*
Predicted Unionization*Politics IV		-0.218
		(0.085)*
Labor Politics Variables		
Politics II	0.394	0.295
	(0.179)*	(0.055)**
Politics III	0.176	0.484
	(0.209)	(0.057)**
Politics IV	-2.077	0.364
	(0.891)*	(0.122)**
Resistance/Avoidance	0.005	
	(0.001)**	
Macro Economic Variables		
Lagged GDP	0.074	0.015
	(0.015)**	(0.003)**
Unemployment	0.048	0.139
	(0.208)	(0.033)**
Trade Balance	0.001	-0.008
	(0.009)	(0.001)**
Labor Productivity	-0.046	0.011
	(0.021)*	(0.003)**
Conventional Variables		
Age	-0.038	0.005
	(0.031)	(0.005)
Female	-0.748	-0.353
	(0.491)	(0.079)**
Marital Status	-0.555	0.062
	(0.846)	(0.136)
Education	-0.078	0.084
	(0.104)	(0.016)**
Experience	-0.158	0.185
	(0.353)	(0.054)**
Experience^2	0.021	-0.016
	(0.028)	(0.004)**
Tenure	0.453	0.08
	(0.128)**	(0.018)**
Tenure^2	-0.015	-0.003
	(0.006)*	(0.001)**

Correction for Simultaneity and Wage Effect of Unionization - Cont'd

	2SLS with Logistic Transformation (Model V)	
	Unionization Equation	Wage Equation
White Collar	0.18	0.123
	(0.588)	(0.09)
Service Work	-0.624	0.044
	(0.383)	(0.062)
Expertise	-0.7	0.032
	(0.507)	(0.085)
Skill Level 2	-0.48	0.151
	(0.363)	(0.058)*
Skill Level 3	0.939	-0.195
	(0.658)	(0.098)*
Skill Level 4	0.023	0.085
	(0.517)	(0.083)
Skill Level 5	0.676	0.427
	(1.402)	(0.217)*
Skill Level 6	-3.639	-0.698
	(5.451)	(0.877)
Skill Level 7	1.232	0.223
	(0.907)	(0.132)
Firm Size 2	0.976	-0.038
	(0.454)*	(0.076)
Firm Size 3	2.815	-0.069
	(0.432)**	(0.099)
Firm Size 4	2.233	-0.026
	(0.378)**	(0.079)
Industry Dumy	yes	yes
Constant	0.159	6
	(1.712)	(0.277)**
N	476	505
R^2	0.78	0.94

Note: Standard errors in parentheses
* $p<0.05$; ** $p<0.01$

APPENDIX 4.3

Micro Data Analysis: Treatment Effects Model

	Treatment Effects (Model IX)	
	Union Status Equation	Wage Equation
Union		0.219
		(0.006)**
Union*Politics II		-0.055
		(0.004)**
Union*Politics III		-0.044
		(0.003)**
Union*Politics IV		-0.028
		(0.004)**
Labor Politics Variables		
Politics II	0.349	0.183
	(0.004)**	(0.012)**
Politics III	0.194	0.413
	(0.014)**	(0.004)**
Politics IV	-0.921	0.256
	(0.074)**	(0.014)**
Resistance/Avoidance	0.002	
	(0.000)**	
Macro Economic Variables		
Lagged GDP	0.029	0.021
	(0.000)**	(0.002)**
Unemployment	0.082	0.178
	(0.019)**	(0.004)**
Trade Balance	-0.005	-0.01
	(0.000)**	(0.001)**
Labor Productivity	-0.041	0.007
	(0.000)**	(0.0004)**
Conventional Variables		
Age	-0.011	0.001
	(0.000)**	(0.000)**
Female	-0.096	-0.259
	(0.002)**	(0.007)**
Marital Status	0.016	0.084
	(0.002)**	-0.008
Education	0.005	0.035
	(0.002)**	(0.000)**
Experience	-0.032	0.062
	(0.001)**	(0.004)**
Experience^2	0.001	-0.004
	(0.000)**	(0.000)**
Tenure	0.124	0.036
	(0.002)**	(0.000)**

Micro Data Analysis: Treatment Effects Model-Cont'd

	Treatment Effects (Model IX)	
	Union Status Equation	Wage Equation
Tenure^2	-0.003	-0.001
	(0.000)**	(0.000)**
White Collar	-0.185	0.116
	(0.002)**	(0.011)**
Service Work	-0.143	-0.058
	(0.003)**	(0.013)**
Expertise	-0.32	0.246
	(0.002)**	(0.012)**
Skill Level 2	-0.01	0.142
	(0.002)**	-0.01
Skill Level 3	-0.021	0.031
	(0.003)**	-0.017
Skill Level 4	-0.007	0.085
	(0.002)**	-0.011
Skill Level 5	0.085	0.09
	(0.004)**	(0.022)**
Skill Level 6	0.155	0.081
	(0.058)**	(0.012)**
Skill Level 7	0.009	0.133
	-0.014	(0.003)**
Firm Size 2	1.027	-0.004
	(0.010)**	-0.003
Firm Size 3	1.581	0.009
	(0.004)*	(0.011)**
Firm Size 4	1.96	0.063
	(0.010)**	(0.004)**
Industry Dummy	yes	yes
Constant	-0.105	6.667
Observations		306239
Log Likelihood		-209300.27

APPENDIX 4.4

Individual Wage Effects of Union With Year Dummy

	Treatment Effect Model with Year Dummy (Model X)
Union	0.19
	(0.007)**
Union*Year 89	0.38
	(0.006)**
Union*Year 90	-0.005
	(0.005)
Union*Year 91	-0.03
	(0.005)**
Union*Year 92	-0.07
	(0.005)**
Union*Year 93	-0.05
	(0.005)**
Union*Year 94	0.039
	(0.005)**
Union*Year 95	-0.048
	(0.005)**
Union*Year 96	-0.046
	(0.005)**
Union*Year 97	-0.034
	(0.005)**
Union*Year 98	-0.024
	(0.005)**
Union*Year 99	0.0007
	(0.0049)
Year	
Year 89	-0.247
	(0.005)**
Year 90	0.011
	(0.004)*
Year 91	0.022
	(0.005)**
Year 92	0.059
	(0.004)**
Year 94	0.142
	(0.005)**
Year 95	0.178
	(0.004)**
Year 97	0.37
	(0.006)**
Macro Economic Variables	
Lagged GDP	0.016
	(0.000)**
Labor Productivity	-0.04
	(0.000)**

Individual Wage Effects of Union With Year Dummy- Cont'd

	Treatment Effect Model with Year Dummy (Model X)
Trade Balance	-0.025
	(0.000)**
Unemployment	0.32
	(0.002)**
Conventional Variables	
Age	0.0007
	(0.000)**
Female	-0.261
	(0.001)**
Marital Status	0.084
	(0.002)**
Education	0.034
	(0.000)**
Experience	0.06
	(0.001)**
Experience^2	-0.003
	(0.000)**
Tenure	0.034
	(0.000)**
Tenure^2	-0.0004
	(0.000)**
White Collar	0.11
	(0.002)**
Service Work	-0.056
	(0.003)**
Expertise	0.243
	(0.002)**
Skill Level 2	0.14
	(0.002)**
Skill Level 3	0.03
	(0.003)**
Skill Level 4	0.08
	(0.002)**
Skill Level 5	0.08
	(0.004)**
Skill Level 6	0.076
	(0.011)**
Skill Level 7	0.13
	(0.003)**
Firm Size 2	0.002
	(0.002)**
Firm Size 3	0.018
	(0.004)**
Firm Size 4	0.073
	(0.004)**

Individual Wage Effects of Union With Year Dummy-Cont'd

	Treatment Effect Model with Year Dummy (Model X)
Industry dummy	yes
Constant	7.1
	(0.016)**
N	306239
Log-Likelihood	-206295.83

Note: (1) Standard errors in parentheses
(2) * p<0.05; ** p<0.01

CHAPTER FIVE

IMPLICATIONS:

POLITICAL ECONOMY OF INDUSTRIAL RELATIONS IN KOREA

5.1 Introduction

Allowing for the time-dimensional macro effects of labor politics and economy-wide trends, this study demonstrates new evidence of the wage effect of unions in Korea. The empirical outcomes undermine the prevailing perception of unionism in decline in Korea. In addition, the study sheds light on the dynamism of the labor control strategies of the government; the government implemented varied control strategies which had different impacts on unionism. Empirical evidence of strong unionism also suggests a possibility of transformation of Korean industrial relations towards a neo-corporatist model as an alternative to the current trends of neo-liberalism in Korea. In association with the research question this study raised, this chapter summarizes the valid implications the study has about the political economics of industrial relations in Korea.

5.2 Unionism in Crisis in Korea?

A main finding of this study is that the Korean unions retained sufficiently strong bargaining power to fulfill their economic roles of bargaining agents to improve earnings in the union sector. Given that the union wage effect reflects the outcomes of the strategic choices of unions, the estimated large union wage premium reflects bargaining power

enough to achieve their strategic goals, which contradicts the prevailing view of unionism-in-crisis in Korea. In order to clarify the main argument, it is of use to re-examine the conventional macro indicators (i.e., union density and labor disputes) of union strength in combination with the empirical outcomes.

Union Density and Bargaining Power

As shown in Table 5.1, union membership has steadily declined since the 1990s in Korea. As noted, declining union density seems to be a worldwide trend due to external changes such as the structural transformation of industry, advances in technology, and intensified competition caused by the globalizing economy. It is likely that density decline shrinks the organizational base for unions, reducing bargaining power of the unions.

Table 5.1. Trends of Union Density and Membership

	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
Density	13.8	17.8	18.6	17.2	15.8	14.9	14.1	13.5	12.6	12.2	11.2	11.5
Membership	1,050	1,707	1,932	1,886	1,803	1,734	1,667	1,659	1,614	1,598	1,484	1,401

(Source: KIL Labor Statistics, 2000; Unit: density=percent, membership=thousands)

The aggregate panel analysis, however, shows that positive wage effects of union density in Korea were sustained. In the initial stage of democratization (1987~89), the macro wage effect of union density was 34 percent, and then it declined but remained positive at between 12 and 16 percent.[127] These figures imply that, despite a steady decline in union density, Korean unions retained effective market power in the labor

[127] As discussed in detail in Chapter IV, it is a potential industry-wage gap between 100 percent organized industry and non-organized one. It comes to have practical meaning when it is combined to organizational rate of each industry.

markets.[128] Micro data analysis also asserts that union bargaining power is strong as shown in the large individual wage effects of union, 21 percent on average by period.

What elements underpin the strong bargaining power of the Korean unions amid declining union density? As Wallerstein and Western (2000) suggest, we need to note the concentration of unions on strategic sectors in Korea. The structural position of unions, that is, whether the union concentrates on strategic industrial sectors within an economy or not, tends to determine the quality of bargaining power (Valenzuela, 1989). First, as Korean unionism has evolved centering on large-size firms in the heavy industry sector (Kim, 1995; Choi, 1997; Lim, 1999), union membership has concentrated in the large-size firm sector involving Chaebols. Table 5.2 shows composition of union membership by establishment size.

Table 5.2. Union Membership by the Scale of Firms

Firm Size	Less than 100	100~499	500~999	1,000~4,999	More than 5,000	Total
Membership (Thousand)	131 (9.4 %)	356 (25.3 %)	155 (11.1 %)	366 (26.1 %)	394 (28.1 %)	1,402 (100)

(Source: Ministry of Labor, 1998)

More than half of total membership (54.2 %) now belongs to the large-size firms with more than 1,000 employees, and especially, 28.1 percent is concentrated in the firms with more than 5,000 employees. As is well known, the Korean economy has a high degree of dependence on large-size firms, especially Chaebols, which compose the most strategic industries in Korea. Accordingly, the concentration of unionism in this sector may provide a substantial power base for the unions.

[128] In a sense, the inelasticity of unionized labor hampers employers to flexibly substitute nonunionized labor in the labor market.

Second, in close relation with the above fact, unions are concentrated in strategic industries such as the metal, chemical, auto, electronic, and finance industries. As shown in Table 5.3, the unions are intensively concentrated in heavy and chemical industries and the financial sector, which have played central roles for economic growth in Korea.

Table 5.3. Union and Membership in Main Industries[129]

	Union	Membership
Total	5,560	1,401,940
Metal and Chemical Industry	1,575 (28.3%)	414,013 (29.5%)
Finance and Banking Industry	161 (2.9%)	114,894 (8.2%)
Auto Industry	595 (10.7%)	82,261 (5.9%)

(Source: KLI Labor statistics, 2000)

The structural foundation of Korean unionism, that is, concentration in the strategic sector, has strengthened unions' influence in the national economy as a whole, providing a fundamental base for bargaining power.

Industrial Action and Institutionalization of Conflict

As noted, declining industrial actions have often been suggested as evidence of the weakness of unions in Korea. This is a partly valid view in that strikes represent the use of workers' collective resource to put pressures on the government and management (Rubin, 1986; Cohn, 1993). We need to take a careful look at the substantial aspect of labor disputes, however. Although the indicator shows a steep drop in labor disputes since 1989 in Table 5.4, it may not reflect declining union bargaining power. Rather, the volume and influence of the labor disputes demonstrates that the Korean unions have the potential capacity to mobilize their members to durable and destructive industrial action.

[129] It is based on federation of unions at the industry level, so that the number of unions which affiliated to no upper federation is omitted.

Table. 5.4. Labor Disputes: Participants and Economic Losses in Korea during 1987~1999

Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Labor Dispute[1]	3,749	1,873	1,616	322	234	235	144	121	88	85	78	129	198
Participants and Economic Loss													
Participants[2]	1,262	293	409	133	175	105	108	104	50	79	44	146	92
Work Day Loss3	6,947	5,401	6,351	4,487	3,271	1,528	1,308	1,484	393	893	445	1,452	1,366
Production Loss[4]	2,778	3,202	4,200	1,439	1,232	1,959	2,087	1,503	1,076	1,798	2,993	1,636	1,891
Export Loss[5]	537	732	1,363	314	238	260	564	550	200	386	498	825	771
Participants and Economic Loss per Labor Dispute													
Participant	0.34	0.16	0.25	0.41	0.75	0.45	0.75	0.86	0.57	0.93	0.56	1.13	0.46
Work Day Loss	1.85	2.88	3.93	13.93	13.98	6.50	9.08	12.26	4.47	10.51	5.71	11.26	6.90
Production Loss	0.74	1.71	2.60	4.47	5.26	8.34	14.49	12.42	12.23	21.15	38.37	12.68	9.55
Export Loss	0.14	0.39	0.84	0.98	1.02	1.11	3.92	4.55	2.27	4.54	6.38	6.40	3.89

(Source: KLI Labor Statistics, each year)

Note: 1. Incident of Labor Disputes
2. Thousands
3. Work Day Loss in Manufacturing
4. Billion Won, in Manufacturing
5. Million US dollars

Table 5.4 shows the volume of labor disputes in terms of participants, work-day loss, production loss, and export loss per incident of the labor dispute indicating union strength. Compared to the period of liberalization (1987~89) when labor disputes culminated, the size and destructive power of disputes markedly accelerated during the 1990s. An average 3.9 days of working day loss in 1989 tripled to 14 days in 1990 and 91 and remained at a high level of workday loss over the whole period. The longer duration of industrial conflicts indicates that unions could mobilize their members to engage in industrial disputes or strikes for a relatively longer time. The destructive influence of labor disputes is well represented by production loss and export per labor disputes. In 1989, the production loss per labor dispute was 2.6 billion won (about 3.8 million US dollars), but it persistently increased to reach the peak point of 38.37 billion won (about 32 million US dollars) in 1997[130]. Export losses were also larger in the 1990s than in the late 1980s.

The number of participants in labor disputes may suggest the capability of unions to mobilize their members to industrial actions. In 1987, the average number of participants in a labor dispute was 340, while it increased to 860 in 1994. In addition, the unions seemed to be successful in mobilizing larger numbers of workers during the economic crisis in 1998 to resist the industrial restructuring implemented by the IMF bailout program.

In sum, Korean unions have retained potential destructive power as well as the capability to mobilize members to industrial actions. Accordingly, the declining labor disputes in the 1990s may reflect further institutionalization of industrial conflicts based

[130] The US dollar values are calculated by applying then exchange rates (1989=680 won/1 dollar, 1997=1200 won /1 dollar).

on union strength, rather than the decline of union bargaining power. Simultaneously, this is consistent with the fact that growth in union strength contributed to replacing predominant unilateralism with balanced bipartism through collective bargaining as a "conflict institution" as well as an "income-distributive mechanism."

5.3 Impacts of Labor Control Strategies and Unions

Of primary interest is the empirical causality between union bargaining power and labor control strategies. As emphasized in analysis of Chapter IV, the changing pattern of union bargaining power in association with labor control strategies implies that each control strategy differs in terms of its impact on unionism. At issue are two findings in the present study. First is the difference in the impact between the authoritarian repression of Roh's government and the market-oriented controls of Kim's government. Second is the relative large union wage effect during the period of neo-liberalism.

State-corporatist Control vs. Market-oriented Control

As shown in both the aggregate panel and micro data analysis, Korean unions had better payoff under authoritarian repression. In particular, the relative real wage gain of unions in Table 4.10 in Chapter IV suggests that, despite similar levels of union wage effects, the substantial wage gain weighted by real wage increases was larger in the authoritarian repression rather than in the market-oriented controls.

This wage gain may be due to the differently oriented aims of the control policies. Authoritarian repression was similar to state-corporatist controls aiming at depoliticizing organized labor in pursuit of preempting a national "political market." It is more likely

that the government attempted to delay "political" evolution of independent unionism through accommodating the economic demands of the working class. As in the historical review, Roh's government entirely blockaded political challenges from independent unions as seen in the case of the KTUC at the national level. At the same time, the government provided "carrots" for the unions at the workplace level. It both permitted organized labor to enjoy rights to organization and autonomous collective bargaining and implemented varied employee welfare programs. Both political repression and economic concession raised the entry threshold into the national political market for the unions by delaying the political evolution of the unions and by removing individual incentive to belong to unions.

In contrast, the market-oriented controls were directly targeted to reduce the "economic" power of unions to intervene into wage determination (Valenzuela, 1989). The control regime weakened the institutional power of unions, which insulates and protects individual workers from labor markets, to atomize the working class. As noted before, the Kim Young-sam government facilitated labor market flexibility in the name of national competitiveness, which threatened employment security and undermined the organizational foundation of the unions engendering a worse pay-off for unions.

Economic Crisis, Neo-liberalism, and Unions

It seems complicated to combine the harmful impacts of neo-liberal controls with the relatively large wage gains of unions. Despite the fact that real wages decreased by 15

percent due to the economic crisis,[131] the estimated wage effect of unions increased to 21 percent in this period, 2 percent more than the previous period.

What are the main factors underpinning this fact? Two central facts are noteworthy. First, with the neo-liberal pressure of the IMF, reinforced legal devices for enhancing labor market flexibility such as a freer lay-off system, flexible time system, and worker-leasing system were institutionalized in this period.[132] As a result, traditional lifetime employment, a pillar of the Korean economic model, was dismantled, and instability in employment increased. The high wage premium may indicate the restoration of a tradeoff between wage and employment. As reinforced labor market flexibility ended long-standing tight labor markets in Korea, Korean unions could no longer maximize wage increases without sacrificing employment. In this sense, the relative high wage premium may be coincident with the positive wage effect of reduced employment resulting from industrial restructuring. Possibly, less productive regular workers were replaced with temporary workers (leased workers or part-timers) or sub-contracting, while a small number of productive core workers remained. Thus, part of the high wage effect is attributable to the positive effect of large-scale employment- downsizing on wages.

An alternative explanation is that the union wage effect is associated with the fast restoration of the Korean economy from the economic crisis. As noted in Chapter II, the Korean economy grew by 9.9 percent in GDP in 1999 only one year after the IMF intervention. The unions might have picked up the positive impact of the fast economic

[131] Refer to Table 4.8 in Chapter IV.

[132] Even if the labor market flexibility started to increase with Kim Young-sam government (here, in the period of market-oriented controls), it was reinforced and legally institutionalized in the neo-liberal regime by IMF-intervention (e.g., legalized mass lay off system, flexible work time, and leasing worker system). As a result, tight labor market ended and Korea become a jobless society.

recovery. These two possible explanations may require further sophisticated analytical study on the employment effects of unions and the tradeoff between wage and employment in Korea, which is reserved for future studies.

5.4 Strong Unionism and Labor Market Dualism

This study has another valid implication about a change in labor markets; strong bargaining power caused dualism of the labor market by unionization. In other words, as unions retained bargaining power, the adverse effects of external changes such as economic recession were more likely to pass over the non-union sector.

The degree of market segmentation depends on combination of union density and union wage effects. As shown in Table 5.5, average union density declined by period to 11.5 percent in the period of neo-liberal controls.

Table 5.5. Union Density and Macro/Individual Wage Effects

Labor Politics	Liberalization	Repression	Market-oriented	Neo-liberalism
Union Density (%)[133]	16.7	15.9	12.7	11.5
Macro Effect, % (A)[134]	34***	14***	15**	12**
Individual Effect, % (B)	24***	18***	19***	21***

Note: ** $p < 0.05$; *** $p<0.01$

Amid decreasing union density, the macro effect of union density on industry wages remained positive and the individual wage effect rose steadily in the 1990s. In the case of a decline of union membership, the large individual wage effect of unions caused an increase in wage inequality between union workers and nonunion workers because the small number of union workers earned more than the large number of nonunion workers.

[133] Union density is average by period.

[134] The macro effect in this table is potential effects based on comparison between industry with 100 % unionized and non-unionized as noted before.

In this view, dualism in the labor market has deepened since 1990 in Korea. In particular, the economic crisis in late 1997 deepened market dualism increasing income inequality between the union and nonunion sectors. Union density decreased to 11.5 percent, while the individual wage effect increased to 21 percent. In other words, the small proportion of workers in the union sector earned 21 percent more than the large number of nonunion workers, which suggests that strong unionism increased wage inequality between the two sectors by passing the adverse impact of economic recession to the nonunion sector.

5.5 An Alternative Perspective: Diversity within Labor Controls

This study questions the validity of the current perspectives, that is, state-corporatist versus market-mechanism controls with an excessive focus on national politics between the government and organized labor. As noted, these perspectives have illuminated the structural mechanisms of labor controls. However, they have not sufficiently explained the diversity of the labor control policies.

It is worthwhile to note the diversity within a set of labor controls; the Korean government implemented varied control strategies which involved different approaches to workplace and national industrial relations. The government's approached vis-à-vis organized labor sometimes look contradictory. From this view, the prevailing explanations are limited to illuminating the dynamic changes in labor control policies throughout the period of post-democratization because of their excessive emphasis on national labor politics.

The difference in the labor controls at the workplace and at the national level have began to be evident since the second half of Roh's government. At the national level, Roh's government employed exclusionary repression vis-à-vis independent unionism. With the onset of the Kim Young-sam government, the first civil government, authoritarian exclusionary repression began to be somewhat diluted and was replaced with inclusive approaches through varied experiments with social pacts through the tripartite IRRC (the Industrial Relations Reform Committee). The Kim Dae-joong government also attempted to positively include the independent unions within national politics through neo-corporatist arrangements such as the Tripartite Committee in order to cope effectively with the economic crisis. Although a series of experiments with social pacts was not so successful, it significantly affected Korean industrial relations. For example, the national organization of independent unions was recognized to be a legal entity and gained, if imperfect, a status as a social partner.[135] At the workplace level, Roh's government tolerated autonomous collective bargaining unless industrial conflicts hampered the national economy, which is a substantial shift from the past authoritarian approaches to modern industrial relations. In contrast, Kim Young-sam government approached workplace industrial relations with controls through market mechanisms, eroding protectionist labor-institutions with a wide range of economic liberalization policies. This market-oriented control strategy placed more priority on rapid economic recovery by removing rigidity in the labor markets. It contrasts with the preceding Roh's

[135] As noted, there are varying evaluations about the outcomes of the experiments with social pacts. It is generally accepted that the social pacts were not successfully implemented and then the Tripartite Committee undergone difficulty. Nonetheless, we need to acknowledge the positive effects of the social pacts. Further, taking it into account that institutionalization may need a relatively long time for accumulated experiences, it may be wrong that the experiments were nothing in our history of industrial relations. The major actors including labor should not abolish the corporatist arrangement. Rather, based on the experience, we need to search for a way to develop a Korean corporatist model as an alternative.

government. For example, freer rights to layoff and flexible usage of labor threatened union's market status as a labor market institution, while the managerial control power of employers increased. The market-oriented controls were further reinforced by IMF intervention towards neo-liberalism during the Kim Dae-joong government. To avoid redundancy, a brief explanation summarizes the distinct approaches by regime in Table 5.6.

Table 5.6. Comparison of Diverse Labor Control Strategies In Korea during 1987~1999

Political Regime	Labor Control Policies		Note
	National Industrial Relations	Workplace Industrial Relations	
Roh Tae-woo Government (1987~89: First Half)	*Legacy of Authoritarianism* • Legal Restriction: prohibitions on plural unions, third party intervention, and political activity	*Partial Liberalization* • Autonomous Collective Bargaining • Improved Union Rights to Organization and Regular Activities • Partial Recognition of Union Shop	Ad hoc Labor Policies
Roh Tae-woo Government (1990~92: Second Half)	*State-Corporatist Repression* • Political Repression on Independent Unionism • Support for Official Union (the FKTU)	*Less Interventionist Approach* • Autonomous Bargaining • Employee Welfare Funds • Employment Insurance System • Assistance for Employee Housing	State-corporatist structure: Coexistence of Repression and Accommodation
Kim Young-sam Government (1993~97)	*Pseudo-Corporatist Approach* • Central Bargaining for National Wage • The tripartite arrangement o The IRRC	*Market-oriented Controls* • Freer Managerial Layoff • Flexible Usage of Temporary Work • Market Liberalization • Privatization of Public Business	Dominance of Market-oriented Controls / Weak corporatist politics
Kim Dae-joong Government (1998~99)	*Neo-Corporatist Approach* • Tripartite Committee o Social Pacts • Recognized Plural Unionism o The KCTU • Abolished Prohibition on third-party intervention	*Neo-Liberal Controls* • IMF bail-out program • Institutionalized Labor Flexibility Device: Managerial Layoff, Leasing workers system • Unstable Employment: Increase of Temporary Work • Employment Adjustment	Contradictory Mixture of Neo-liberalism and Neo-corporatism

SUMMARY AND CONCLUSION

This study investigated union bargaining power in association with the macro effects of the government labor controls and changes in the market in Korea from 1987 to 1999 by applying an improved empirical method. The empirical outcomes counter the conventional perception of unionism-in-crisis, affirming that Korean unions retained strong bargaining power to fulfill their roles successfully throughout the period under this study. In addition, this study found causal relations between union bargaining power and labor controls, in which each labor controls strategy has different impacts on union bargaining power. During the period of economic crisis, neo-liberal economic restructuring deepened the dualism in the labor market along unionization due to strong unionism, increasing income inequality between union and nonunion sector.[136] This study also paves a theoretical foundation for a discussion of the transformation of Korean industrial relations, suggesting that strong unionism in Korea meets a mature condition for possible shift toward a corporatist industrial relations model.[137]

The main outcomes of this study can be summarized by five factors.

(1) A more sophisticated empirical approach produces a different view of prior research in Korea. The cross-sectional analysis employed commonly by the previous studies could not allow for the time-dimensional factors of macro economic conditions

[136] This study is confined to until 1999 so that lagged effects of the neo-liberal economic restructuring is not considered in an appropriate manner.

[137] This empirical study is an attempt to illuminate the necessary precondition for the Korean industrial actors to develop their own model based on corporatism. Due to consistency of this dissertation, the part regarding theoretical consideration in relation to the issue of transformation in Korean industrial relations was removed. In near future, the removed part will emerge in a form.

and the government's labor control policies and produced spurious outcomes underestimating the virtual union wage premium. The panel data and RCS (Repeated Cross-sectional) micro data analysis in this study allowed for the coincident effects of the time-dimensional market factors and labor control strategy, and the union wage effect was measured as 24 percent in 1987~89, 18 percent in 1990~92, 19 percent in 1993~1997, and 21 percent in 1998~99. In order to measure the industry-wide effects of unionization, this study applied an aggregate data analysis, which demonstrated the positive impact of union density on the industry wage over the whole period.

The empirical outcomes assert that the bargaining power of Korean unions is still strong, which counters the prevailing current view of crisis of unionism and decline in union bargaining power. Although union membership and industrial actions declined during the 1990s, Korean unions have fulfilled their roles of improving the economic well-being of union members. The complete model in micro analysis confirms that Korean unions produced large wage premiums across the whole period after political democratization. In particular, it is noteworthy that the unions survived a harsh wave of neo-liberal trends, even during the IMF-crisis insulating unionized workers from the adverse effects of severe economic recession.

(2) This study also illuminates the dynamic structure of labor control strategies along the multi-level of industrial relations. The current reductionist debates overly emphasize national labor politics, and as a result, they do not exhaustively discuss the ongoing shifts in labor control strategies both at the workplace and the national level. In the period of post-democratization, the government employed varied control strategies

including a state-corporatist approach, market-oriented approach, and a mixture of them with strengthened neo-liberalism.

(3) The state-corporatist control in the second period (1990~92) accrues more gains to organized labor, while market-oriented controls are more antagonistic to unionism. In fact, Roh's military government not only allowed unions to autonomously bargain with employers but also implemented a package of employee welfare programs. Such economic accommodations for the working class fits Collier and Collier's (1979) "inducement" for political subordination. In contrast, the Kim Young-sam government, the first civil government, employed a market-oriented approach to improve national competitiveness, which had a further negative impact on union bargaining power.

(4) The economic recession and strong unionism during the 1990s deepened labor market segmentation, increasing earning inequality between the union and nonunion sectors in Korea. The combination of the two factors imposed the negative effects of increasing neo-liberal trends, which were strengthened by labor control strategies since the mid 1990s, on the nonunion sector. As a result, dualism between the union and nonunion sectors increased in the Korean labor market.

(5) The strength of Korean unions implies that there may be a mature condition for the possibility of a neo-corporatist model as an alternative for the future Korea. Korean union has grown to gain a substantial power vis-à-vis the government and employers. Based on Wright's (2000) theoretical survey, the substantial associational power of the unions has created some pressure to move towards a corporatist industrial relations as a compromise between labor and management may provide a better payoff than ongoing adversarial relations for both parties and the national economy.

This study has some limitations and reserves several important issues for future research. First, in terms of methodology, this study used log Wage as a dependent variable. A useful candidate for the dependent variable in estimating the union wage effect is the rate of wage change. This method has the advantage of capturing the moving average of wage. In addition, it is a straightforward way to remove potential individual fixed effects. A true micro panel dataset is appropriate for this approach. Unfortunately, a micro panel dataset is not available in Korea at this point, which had restricted this study.

In addition, this study dealt with the industry fixed effects through aggregate data analysis. Individual fixed effects were not accounted for in an appropriate manner, however.[138] An IV approach is an appropriate method to address this issue. Recently, Moffitt (1993) developed an IV approach using the RCS dataset, and Belman and Monaco (2001) advanced this approach in their empirical studies.

Second, this study lacks threat and/or spillover effect, which somewhat limits a complete analysis on union bargaining power in Korea. Threat effect is the tendency for non-unionized employers to respond to the threat of unionization by increasing the earnings and benefits of their workers (Leicht, 1989). In contrast, spillover effect means that the increased labor supply in the nonunion sector due to a raised union wage tends to depress the wage level in the nonunion sector. In this sense, it operates through labor mobility on the margin. If the threat effect (or spillover effect) is positive, the union-nonunion wage differential is smaller (or larger) so that union bargaining power is underestimated (or overestimated). Little research on these issues has been conducted in

[138] This study attempted to use the applied method of Moffitt's (1991) IV approach to estimate the individual wage effect of unionism, but the outcome are excluded in the final version due to instability. For future studies, a brief model specification is appended.

Korea: for example, Song (1991) argues that a union threat effect was not observed in the strategic sector in Korea in the 1970s. Further studies are required in the future.

Third, in association with the trade-off between wages and employment, the impact of unions on employment should be thoroughly studied as neo-liberalism enhances the labor market flexibility, especially in the period of post-IMF intervention. Korea became a jobless society after the IMF intervention, and traditional lifetime employment is now fading out. The importance of the union's role to secure jobs is increasing now. An extensive study on the employment effect of unions will deepen understanding of Korean unions' bargaining power.

Fourth, the period under this study is limited; it ends with the first period of the Kim Dae-joong government due to the restrictions of the empirical dataset. Korea is now in turmoil; despite being able to escape earlier from the IMF-bailout program, unemployment keeps rising and employment instability increases, resulting primarily from a structural adjustment toward neo-liberalism; GDP growth is becoming sluggish, and conflict between the government and organized labor is increasing revolving around the issue of the Daewoo auto company. These problems are central, desperate issues in Korean industrial relations which urgently need further sophisticated study.

APPENDIX

Model Specification of IV Approach

A population model takes the form

$$(1) \quad \log W_{it} = X_{it}\beta + \alpha_1 U_{it} + \alpha_2 E_t + \alpha_3 P_t + \alpha_4 U^* P + f_i + \eta_t + \varepsilon_{it},$$

where

f_i is the unmeasured effects on wage of individual characteristics which is time constant; η_t is a time component of the error term, and $E(\eta_{tj}) \neq E(\eta_{ik})$; ε_{it}, is the remaining error term assumed i.i.d. with zero mean and constant variance; and others are identical to Model I. Our micro data of individual wage is not true longitudinal data, but RCS data. There is only one observation per individual and then it is not possible to estimate the RE and FE estimation model (Belman and Monaco, 2001).

An alternative is IV (Instrumental Variables) approach. The structural equation with RCS data can be estimated using Moffitt's (1993) IV estimator. Assuming i.i.d. error structure, Equation (1) can be rewritten in a simple form as

$$(2) \quad y_{it} = Z_{it}'\delta + f_i + \mu_{it},$$

where Z_{it} is a vector of time-varying regressors potentially correlated with f_i, and $\mu_{it} = \eta_t + \varepsilon_{it}$. By definition, the individual fixed effect is assumed to be time-constant and can be written as,

$$(3) \quad f_i = W_i'\varphi + \nu_i,$$

where W_i is a vector of time-invariant variables for ith individual affecting individual wages and ν_i, is a time-invariant error.

Moffitt (1993) stylizes this as an error-in-variables problem to be solved with an appropriately structured set of instruments (Belman and Monaco, 2001). The instruments

for Z_{it}' should be asymptotically uncorrelated with individual fixed effect, f_i, and error term, ν_i. Since f_i is time-constant, strictly time-variant instruments will be orthogonal to f_i. As Belman and Monaco (2001) suggest, the annual averages of the variables in Z_{it} can be a set of instrument for our model since such averaging eliminates the individual component of the variables. Letting y_{it}, Z_{it}, W_i, and ν_i be the stacked vectors for all i and t, and letting $A = [Z_{it}, W_i,]$ and $\hat{A}=[Z\hat{}_{it}, W_i,]$, where $Z\hat{}_{it}$ is the matrix of least squares prediction from Equation (3), our optimal IV estimator for δ is

$$(\hat{A}'A)^{-1}(\hat{A}'y) \tag{4}$$

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