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# The Evolution of Korea's Industrial Relations System and Change in the Wage-Strike Relationship\*

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**Abstract:** For decades, Korea's brand of state corporatism did not allow "free collective bargaining," but it did permit striking workers to be paid. We briefly reviewed the evolution of post-1953 industrial relations in Korea, which discloses these facts, and in 1987 and 1997 Korea's industrial relations system was twice liberalized. Between 1987 and 1990 two important events transpired. First, there was the transition toward free collective bargaining; and second, the practice of paying striking workers was generally discontinued. These phenomena, and the long-standing business practice of keeping private information about firms' profits, set up two empirical arguments of which were examined: concealing profits from unions suggests an inverse relationship between negotiated wage settlements and strikes in Korea's manufacturing sector in 1988 and 1990; and since Korean firms generally pursued a "no work-no pay" strike policy by 1990, a reduction in wage settlement increases between 1988 and 1990 is suggested, given strike incidence and strike duration. Qualified evidence of a negatively sloped union resistance curve that shifted downward following implementation of the "no work-no pay" strike policy is found using 1988 and 1990 data sets compiled by the Korea Labor Institute, a research arm of the Korean Ministry of Labor.

**Key words:** Korea's industrial relations, wage-strike relationship

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## I. Introduction

As a newly industrialized economy where democratic principles have enjoyed wide acceptance, it seemed inevitable that Korea's industrial relations system would undergo liberalizing reforms. Our first purpose is to briefly examine Korean industrial relations leading up to the reforms of 1987 and thereafter, including the latest round of reforms embedded in the 1997 (and February 1998, amendments to the) Trade Union and Labor Relations Act (TULRA). This examination will center on industrial relations in Korea just before and after 1987. This time period is important because 1987 marks the beginning of Korea's evolution toward a system of "free collective bargaining" (Bognanno, 1988).<sup>1</sup> Shortly after 1987, Korean unions began to use the strike as a negotiating tactic to gain economic concessions from employers. Although strikes had been previously outlawed, when they did occur they were usually mainly motivated by anti-government displeasure.<sup>2</sup>

Our second purpose is to examine the relationship between negotiated wage settlements and strike incidence and strike duration in Korea during the period immediately following the reforms of 1987. "Turmoil" best describes Korea's labor environment in 1987, 1988, and 1989, but by 1990 Korea's industrial relations climate had improved significantly (Bognanno, Budd and Lee, 1994).

Assuming that unions are not privy to information about firms'

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1. Under a system of "free collective bargaining" (1) unions are worker-controlled, not government- and/or business-dominated; (2) wages are determined through collective bargaining, without government interference; (3) economic strikes are allowed; and (4) the government functions as "rule maker" and unbiased administrator of the rule.

2. Published Ministry of Labor statistics show that during the pre-1987 period, strikes over wages occurred in fewer than one-third of the cases; and that in some years, 1980, 1982 and 1983, for example, economic strikes occurred in fewer than one-in-ten cases (Quarterly Labor Review, various issues).

profits, Sir John Hicks<sup>3</sup> and others<sup>4</sup> have suggested that, as a consequence, wage settlements and strike incidence and strike duration (i.e., the “union resistance curve”) are negatively correlated. We argue that the “information” assumption is more viable in the Korean case than in some Western economies, possibly explaining why this predicted correlation has been difficult to establish in those cases.

Specifically, we examined the relationship between wage settlements and strike incidence and strike duration in Korea's manufacturing sector in 1988 and 1990, hypothesizing that the correlation will be negative for each year. In 1988 - nearly a year after Korea began allowing unions to bargain and strike with significantly less threat of government reprisal - employers generally paid striking workers, as they previously had. However, by 1990 employers had largely stopped this practice in favor of the “no work, no pay” strike policy. The government and industry champions of the “no work, no pay” strike policy believed that it would increase the relative bargaining power of employers. Thus, our empirical purpose is not simply to estimate the relationship between wage settlements and strikes, but also to preliminarily determine whether the move toward a “no work, no pay” strike policy reduced wage settlements, given strike incidence and strike duration.

Section II describes the evolution of Korea's industrial relations institutions and specifically addresses the change to a “no work, no pay” strike policy and the idiosyncratic ability of Korean firms to keep information about profits private. In section III, we develop the paper's empirical hypotheses and models. This is followed by a brief description of the data in section IV. Next, our empirical results and summary and conclusions are presented in sections V and VI, respectively.

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3. Formal models of this theory appear in Hayes, 1984; Kennan, 1986; Tracy, 1987; and Card, 1990.

4. Hicks, 1932.

## II. Korea's Industrial Relations in Transition

Modern-day industrial relations began in 1948 in Korea. But it was not until the back-to-back governments of Rho, Tae Woo and Kim, Young Sam, nearly forty years later, that industrial relations in Korea began to change from one dominated by government and business interests to one favoring free collective bargaining. The year 1987 proved to be the turning point(Bognanno, 1988).

*The Rhee Period (1948-1960)*. In August 1948, Korea adopted a new constitution, granting workers the right to organize, bargain collectively and strike.<sup>5</sup> However, before the National Assembly could legislate implementing regulations, North Korea invaded the south. Thus, it was not until hostilities ended in 1953 that the republic's contemporary labor laws were first enacted under the stewardship of President Syng-Man Rhee. These laws mark the beginning of institutionalized collective bargaining in Korea. However, the new labor laws promised more to Korea's impoverished workers than the country's war-torn economy could possibly afford. Further, the Federation of Korean Trade Unions (FKTU), Korea's new union central body, was more committed to fighting communism in league with business interests and the Rhee government than to addressing worker interests through collective bargaining.<sup>6</sup> Thus, any hope for the formation of autonomous union dedicated to worker representation was not fulfilled, in the 1950s. In 1960, President Rhee fell from power as student and anti-government strikers demanded political democracy, "autonomous" unions and the "purification" of the

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5. This section draws on Bognanno and Kim, 1981, Bognanno, 1988 and the references cited therein.

6. During the three-year period of U.S. Military Government rule (1945-1948), the formally suppressed and pro-Communist labor organization, the Cheon Pyeong, surfaced in 1945. In 1946 the Daehan Nochong (Federation of Korean Trade Unions) was formed. With backing from both the U.S. military and Syngman Rhee, the Daehan Nochong rivaled the Cheon Pyeong by advancing an anti-Communist ideology. By 1948 the Cheon Pyeong had all but disappeared (N.-J. Kim, 1982).

government-controlled FKTU.

*The Park Period (1961-1979).*<sup>7</sup> Following his military coup in May 1961, General Park, Cheong-Hee dissolved all trade unions and banned collective bargaining in Korea. Later, under close government supervision, the ban was lifted, and a successor FKTU was established, with industry-wide, national unions to which local unions were affiliated. Like its predecessor, the newly fashioned FKTU was subject to government control and most local unions were business dominated at the facility level.

The Park government focused on rebuilding the Korean economy. Guided by a series of Five-Year Plans, economic growth and development under Park was sparked by the production and export of low cost, labor-intensive manufactured goods (Amsden, 1989; Kim and Yoon, 1991). Therefore, during the 1960s, the government's corporatist mantra was "first invest, then distribute," a slogan that resonated favorably among Koreans initially.

As supporters of Park's military coup, the FKTU's leaders were allowed to organize and, on a limited basis, to collectively bargain. It was thought that even with unions, Korea's sizeable labor reserve would impose a "natural" constraint on wage and price inflation, maintaining Korea's export competitiveness. Union density increased from 7.6 percent in 1962 to 12.4 percent in 1970, representing 176,000 and 473,000 union members in each year, respectively.

However, by the turn of the decade, the "first invest, then distribute" mantra began to wear on the public's patience. Poorly managed government-industry projects, nepotism, corruption, demand for political democracy, and the demand for higher wages and greater collective bargaining freedoms, combined to trigger protests and widespread political strikes and, ultimately, a constitutional crisis. In December 1971, President Park issued a Presidential Decree on National Security. Under this decree and its progeny, wage negotiations required prior government approval and "work actions"

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7. See id.

were prohibited. Nearly all strike activity stopped and the government's flirtation with collective bargaining was suspended. Nevertheless, organizing was allowed to continue to appease workers and lend credibility to the perennial promise that free collective bargaining would someday be allowed. In 1979, union density in Korea was 23.4 percent, based on full-time non-agricultural workers, with 1,088,000 workers organized.

The 1971 Presidential Decree could not hold worker discontent in check indefinitely. The public's unease with Park's military dictatorship continued to mount throughout the seventies. In the months preceding Park's assassination on October 26, 1979, workers became increasingly caught-up in student-led, anti-government demonstrations and they began to strike. For a brief period following Park's death, the government appeared to relax its control over industrial relations. On average, Korea had been experiencing about 100 "illegal" strikes annually, but in 1980 some 407 "official" strikes were reported. This number is quite exceptional inasmuch as on May 17 of that year, all strikes and other forms of public demonstration ended with the imposition of Martial Law by Korea's new military dictator, General Chun, Doo-Hwan.

*The Chun Period (1980-1987).* On September 1, 1980, General Chun was inaugurated President. As one of his first acts, the leadership of the FKTU and several national unions were purged and later replaced by unionists loyal to Chun. In December 1980, the National Assembly adopted numerous amendments to Korea's labor laws. These amendments were largely designed to further increase the government's control over the labor movement and to limit workers' right to organize, which had been a relatively easy bureaucratic procedure under Park.

Under Chun, the structure for collective bargaining was changed from industrial- to enterprise-based, and area-wide, multi-plant and multi-employer unions and negotiation structures were generally abolished. Further, Korea's national industrial unions and the FKTU were newly defined as "third parties," a legal designation prohibiting

them from participating in organizing and financing local unions and from participating in collective bargaining. For the first time a local union was required to have at least thirty employee-members or one-fifth of the establishment's workforce as members to be certified. In addition, the government's labor authority was newly empowered to dissolve any union that violates any laws or regulations or threatens to do so. Moreover, felons, former union officers who were dislodged from power, former union officials whose unions were dissolved by government order, and newly hired employees were now prohibited from holding a union office. Still further, local union dues were capped at two percent of monthly wages and specified percentages of dues were to be allocated to "worker welfare" projects. Finally, the scope of bargaining and the right to strike were more sharply limited under Chun. "Closed shop" and "union shop" clauses were now banned. The government reserved the right to determine whether a strike may commence; whether the impasse was to be resolved through interest arbitration, prohibiting a strike; and strikers, if a strike was authorized, were now prohibited from demonstration beyond the employer's immediate premises.<sup>8</sup>

During Chun's administration, union membership and density fell sharply, dropping to 1,036,000 and 15.5 percent, respectively, in 1986. Moreover, until the latter years of his administration, strike activity also fell off and Korea's industrial relations were in shambles.

In February 1988, Chun's term as president ended. Previously, however, in mid-1987, he had already handed the reigns of power over to his heir apparent, General Rho, Tae Woo. Rho and his three rivals for the presidency campaigned on progressive platforms, promising democratic and human rights reforms. Spurred on by mass popular demonstrations, sometimes violent campus protests and anti-

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8. The former Labor Administration Office was upgraded to the Ministry of Labor in 1981. It administered the new certification processes, with its minimum membership prerequisites. It also was empowered to dissolve a union. These powers invited a multitude of government abuses.

government strikes that began to build in frequency from 1984 to 1986, Rho, on June 29, 1987, promised constitutional democracy for Korea and free collective bargaining.<sup>9</sup>

*The Rho Period (1987-1992)*. In 1987 industrial relations in Korea reached a critical point. In that year, the law and practice of industrial relations in Korea's began to change fundamentally. Decades of controlled industrial relations began to give way to its present-day system of free collective bargaining (Rogers, 1990; Kearney, 1991; Bognanno et al, 1994; Park, 1999).

On the heels of his "June 29th" speech, Rho led the National Assembly to enact several liberalizing reforms. The government's pro-business regulatory bias began its evolution toward neutrality. Korea's brand of *state corporatism* — where the government and business elite permitted unions, collective bargaining and sometimes strikes but only within limits set by them, — began to soften. For the first time, workers were granted meaningful rights to form independent unions, bargain over wages and other employment terms and to strike with less threat of government oppression (Bognanno, 1988).

Virtually all of the 1980 amendments to Korea's labor laws were undone by Rho, except that bargaining was to remain at the enterprise level. Moreover, Rho reduced the time it took to issue a union certification and he shortened the dispute resolution processes' "cooling off" periods, while expanding the number of businesses, public corporations and research institutes that may be struck and limited interest arbitration to "public interest" enterprises, such as banking, broadcasting and public transportation. Lastly, Rho enacted provisions requiring unions to be more democratic and responsive to demands of their members.

Because of these changes union organizing leaped forward. With government adopting a more neutral role, union membership grew from approximately 1 million in 1986 to 1.3 million in 1987, 1.7 million in 1988 and 1.9 million in 1989 and 1990, after which time it began to

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9. Quarterly Labor Review, various issues.

shrink. Furthermore, strike activity reached unprecedented heights in the period following Rho's "June 29th" speech. There were 3,749 strikes in 1987; 1,873 in 1988; and 1,616 in 1989; before dropping off sharply to 322 in 1990 (*Quarterly Labor Review*, various issues).

After 1987, collective bargaining largely ceased being the ingenuous process it had previously been. Slowly but surely over the next few years economic strategies began to dominate labor's collective bargaining agendas and strikes became a facility-level tactical weapon to extract wage concessions.<sup>10</sup> Industry grudgingly began to realize that it could no longer rely on the government's backing. Nevertheless, Korean firms, as they had for decades, continued to pay the wages of striking workers and to conceal from public view information about their profits.

Obviously, since post-1987 strikes were generally "legal" and strikers were being paid, the burden of joint strike costs fell almost entirely on employers. Thus, unions were disinclined to make wage concessions either to prevent strikes or to rapidly end on-going strikes. Under the "no work, yes pay" regime employers did the conceding as conditionally suggested by the fact that real wages in manufacturing increased by 8.3 percent in 1987. Real wages increased even faster in 1988 (11.6 percent) and peaked in 1989 (18.3 percent): years during which the share of employers who paid strikers was inching downward. The rate of change in manufacturing real wages began a secular decline in 1990, by which time the vast majority of employers had adopted a "no work, no pay" policy for strikers.<sup>11</sup>

Historically, Korean employers paid strikers because strikes were relatively rare; lasted only a day or two and; when strikes did occur,

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10. Over one-half of all of Korea's strikes since 1987 have centered on wage disputes. (*Quarterly Labor Review*, various issues).

11. Data on real wage settlements by industry are not published. Data on real wage growth in manufacturing are available. The annual rate of real wage growth was 10.7 percent in 1990. Subsequent year rates are as follows: 1991 (6.9 percent); 1992 (8.8 percent); 1993 (5.8 percent); 1994 (8.7 percent); 1995 (5.2 percent); 1996 (7.0 percent); and 1997 (.7 percent). See: Korea Labor Institute, 2000.

they usually represented anti-government protests. Hence, to pay strikers was not to reward anti-employer animus and, furthermore, it was consistent with Korea's paternalistic culture, as nurtured by *chaebol* owners. Additionally, the government often pressured business to pay strikers as part of "back-to-work" settlements, usually observing that unions did not have strike funds (Bognanno, 1988).

The incidence of strikes and the rate at which real wages in manufacturing were increasing in 1987 and 1988 stunned the Rho government and Korea's industrialists. Labor's new liberties and the associated increase in labor's relative bargaining power called for moderation. Therefore, Rho and the Korean Employers' Federation began urging business to abandon their historic "no work, yes pay" practice and to adopt a "no work, no pay" strike policy, arguing that it was in their self interest to do so. Korea's unions opposed this initiative. In 1987 apparently all of Korea's strikers were paid. In 1988, 76 percent of strikers were paid all or some of their wages. The comparable figure was only 15 percent in 1990 (Kim and Yoon, 1991). These secular differences represent a major shift toward the widespread implementing of "no work, no pay" strike policies.<sup>12</sup>

The fact that Korean firms kept private information about their profits is legend. Indeed, unions were not alone in their limited access to information about a firm profits, as was learned in the aftermath of Korea's 1997-1998 financial crises. Even financial analysts were unable to decipher corporate books because of inadequate accounting and reporting standards and the lack of operating and financial transparency. The structure of Korea's *chaebols* was such that ownership rested with a single individual or the owner's family, none of whom were inclined to share their books with "outsiders", including unions. Moreover, when ownership was public,

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12. The "no work, no pay" strike policy won swift private sector acceptance. However, the legal battles spawned by this initiative did not end until December 21, 1995, when Korea's Supreme Court ruled that wages should not be paid to striking workers (The Korean Economic Daily, December 22, 1995, p. 38).

a rarity at the end of the 1980s, most shares were held by the owner, his family or, in the case of *chaebols*, by other firms within the same conglomerate or business group.<sup>13</sup> For these reasons, meaningful financial data was not available to the public.

*The Kim, Y. S. Period (1993-1997).* Kim, Young-Sam's five-year presidential term began in February 1993. During his first four years, union membership declined slowly from approximately 1.7 million to 1.6 million between 1993 and 1996, while union density slipped from 17.2 percent to 14.7 percent. Furthermore, between 1993 and 1996 real wages were growing at only single-digit rates, averaging about 6.5 percent per annum, and strikes tailed off, averaging less than 100 per year. On the surface, the industrial relations climate appeared calm. However, the Kim administration was plagued by labor-related issues, like mounting pressure to allow public sector workers and teacher's collective bargaining power and to recognize the legitimacy and union status of the *Minju Nochong* (Korean Confederation of Trade Unions (KCTU)): the FKTU's increasingly effective rival.<sup>14</sup> Moreover, even as the government's control over the labor movement and collective bargaining activities had dramatically subsided, neither the Rho nor Kim governments had revoked Korea's long-standing policy of excluding unions from politics, much to organized labor's dislike.<sup>15</sup>

In May 1996 organized labor's exclusion from political dialogue ended. Both the FKTU and the KCTU were invited, along with business and public sector representatives, as participants on the Presidential

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13. Park, Y. S., 1999.

14. Established in 1995, the KCTU challenged the monopoly status of the FKTU, Korea's only recognized central labor body. The KCTU succeeded in winning the endorsement of several of Korea's newly formed, unaffiliated national unions and in rallying the support of and participating in strikes by FKTU affiliates. The FKTU's history of government alliances and/or domination continues to compromise its reputation as an autonomous, member-controlled labor organization.

15. Park describes "political exclusion" as the government's policy of not sharing political power with organized labor, while at the same time, advancing policies that have a direct bearing on the labor market operations. See Park, S.-I., 1999.

Commission on Industrial Relations Reform (Park, S. I., 1998, p. 215). Charged with evaluating Korea's industrial relations institutions, President Kim's Commission recommended a major revamping of the nation's labor laws, smoothing the way for Korea's admission into the WTO and OECD (Park, J.-H., 1998b, p. 11). The most significant labor law reforms proposed by Kim's Commission which became law in March 1997, include the following.<sup>16</sup>

- (1) The organization of "multiple" trade unions was newly allowed, such that individual local unions could combine into area-wide, occupational-wide and industry-wide "associations." In addition, these associations may further combine into national confederations, implying that more than one union central body was permitted. In 1999, under President Kim, Dae Jung, the Ministry of Labor officially certified the KCTU. Furthermore, unions were granted the same rights as industry to participate in political action. Lastly, starting in the year 2002, more than one establishment-level union could be granted certification and employer recognition.<sup>17</sup>
- (2) The principle of intra-union democratic control was advanced and the reforms implicitly accepted the principle of labor-management self-determination by expanding strike/lockout rights and limiting the government's role in determining wages and other employment terms.
- (3) The 1997 reforms created a tripartite<sup>18</sup> Labor Relations

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16. The enumerated summaries that follow rely on Bognanno and Hauge (1999), Park, J.-H. (1998, both references); Hyun and Balfour (1998) and Korea International Labour Foundation (1998).

17. These reforms portend an increase in the number of unions and union members in Korea; an increase in the number of unions/collective bargaining agreements per establishment; a shift in the structure of collective bargaining - from establishment-level toward area-wide, occupational-wide and industry-wide negotiations; and the active participation of unions in politics and the formulation of national policies.

18. To advance the principle of impartiality, the Labor Relations Commission is made up of representatives from labor and management, and from the public sector, e.g., professional neutrals and academics.

Commission,<sup>19</sup> independent of the Ministry of Labor, charged with adjudicating unfair labor practices, providing compulsory mediation and interest arbitration and voluntary arbitration and deciding whether to compel interest arbitration under the new labor laws national emergency dispute resolution procedures. Moreover, the Labor Relations Commission was given oversight and adjudicative responsibilities for alleged violations of the amended Labor Standards Act and the Promotion of Worker Participation and Cooperation Act.

- (4) The Labor Standards Act was changed. As concessions to management for accepting changes in the labor laws, a flexible working hours system was installed that reduced the employer's overtime pay liability and employee layoffs were newly permitted.<sup>20</sup>

*The Kim, D. J. period (1998-present).* In the fall of 1997, as President Kim, Y. S. was completing his term in office, Kim, Dae-Jung, Korea's populist president-elect, was planning his February 1998 inauguration. Even though teachers, public sector unions and other interests were critical of Kim, Y. S., the political-economic landscape was generally uneventful. Real GNP was increasing at about a rate of 7 percent, Korea's labor laws were newly liberalized and labor market flexibility had been built into Korea's labor standards. In November 1997, all of this changed. Beginning with the Hanbo and Kia bankruptcies and a string of others, a financial crisis was precipitated

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19. The Labor Relations Commission's structure is comprised of a "central" body, with geographically disbursed "local" commissions, and "special" commissions, appointed to deal with specific labor problems.

20. Korea's recent spats over widespread layoffs are unprecedented. Before 1997 layoffs were not addressed in Korea's Labor Standards Act (LSA); rather, they were a matter for adjudication. On March 13, 1997, the LSA was amended to incorporate common law standards governing layoffs. On February 20, 1998, the LSA was again amended to clarify that layoffs triggered by the transfer, acquisition or merger of businesses were statutorily permitted (Korea International Labor Foundation, 1998).

that led to a sharp downturn in the economy. For the year 1997, real GNP grew by 5.5 percent, unemployment began to spike upward of 3 percent, union membership fell to 1.48 million and real wages growth slipped to .7 percent. At this point, President-elect Kim, D. J. assumed the presidency, de facto. It was he who oversaw Korea's negotiations with the IMF for \$58.3 billion in relief funding, approving its loan-conditions which included tight macroeconomic policies and structural adjustments, such as greater labor market flexibility, corporate reform and transparency, restructuring the banking industry and stronger financial reporting systems.

Labor flexibility was considered essential to attracting foreign capital, which was key to easing corporate restructuring and the private sector's crushing debt burden. Thus, in January 1998, president-elect Kim formed another Tripartite Commission, including representatives of labor, management and the ruling party to discuss ways to overcome the crisis. Labor grudgingly agreed to accelerate the pace of mass layoffs and, in February 1998, the Labor Standards Act was amended to incorporate labor's concession. Similarly, the labor law was amended to allow for certification and recognition of the KCTU.

The unemployment rate reached 6.8 percent in 1998 and 6.3 percent in 1999 with falling real wages. The level of strike activity increased to 129 in 1998 and 198 in 1999, with sharp increases in the number of days lost due to strikes because Korea's *chaebols* and large establishments represented a greater share of firm strikes. Union membership had decreased to 1.4 million. Effective July 1, 1999, teachers, but not public employees, won the right to organize and bargain collectively, but not to strike. Nevertheless, much more free collective bargaining has now taken root in Korea.

### III. Hypotheses and Empirical Models

To conceal information about profits was such an entrenched

business practice in Korea that when collective bargaining began in earnest after 1987, Korea's unions were unable to determine whether specific firms were profitable and, therefore, able to pay higher wages. Further, the unions most likely assumed that "self-interest" seeking firms would manipulate profitability information by pleading poverty and the inability to pay higher wages, whether or not they were actually profitable. Thus, we assume that during the 1988-1990 period, Korea's unions used their newly won strike rights to clarify this conundrum.

*Hypotheses.* The prediction of a negatively sloped union resistance curve derives from the argument that Korean unions use strikes to infer information about firm profits. The mechanism is simple. Facing lower wage increases unions would strike in order to differentiate between firms that are bluffing or not. Strikes are more costly to profitable firms that are bluffing. Thus, to mitigate strike-related costs, the profitable firms will increase their wage offers in order to promptly end strikes. In contrast, the non-profitable struck firms, unable to pay higher wage increases, will hold to their low offers, allowing the strike to drag on until the unions' resistance softens and they accept a lower wage increase. Consequently, as we hypothesize, high (low) wage increases will be associated with strikes of a shorter (longer) duration, and, by analogy, also with a lower (higher) incidence of strikes.<sup>21</sup>

We also preliminarily examined whether Korea's 1988 -1990 move towards a "no work, no pay" strike policy had the effect of reducing wage settlements associated with a "given" union resistance curve. As previously suggested, government and employers advocate for this

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21. Testing the incomplete information theory of strikes by regressing strikes on measures of "unobserved" firm profitability ceteris paribus have been made, for example, by Tracy (1987) using US data; Booth and Cressy (1989) and Ingram, Metcalf and Wadsworth (1993) using UK data; and Card (1990) using Canadian data. However, McConnell (1989) points out that researchers, like unions, should find it difficult to measure or "observe" firm profitability. She, therefore, modeled wage settlements as a function of strike incidence and duration, as we do, to test for the underlying incomplete information proposition.

policy, and the affected firms themselves, surely expected to observe a downward shift in the settlement wage-strike relationship. We concur with this expectation.

Until changed in the late 1990s, the employment relationship in Korea's manufacturing sector was "permanent" in the sense that firms seldom laid off workers. Consistent with the nature of this relationship, struck firms in Korea did not hire "strike replacements workers" and striking workers seldom turned to the labor market in search of alternative work opportunities during a strike. Indeed, even if they had, other businesses would not have hired the strikers. Thus, the idea that negotiated wage settlements might be related to workers' "alternative wages" was inapplicable in 1988 and 1990 (i.e., in cross-section) because there were no alternative job opportunities. However, the inter-temporal change toward a "no work, no pay" strike policy may have improved the relative bargaining power of employers since, by 1990, part of the joint costs of strikes were now bore by workers. The inter-temporal shift in the strike-cost burden wrought by the "no work, no pay" strike policy can be thought of as an inter-temporal reduction in workers' "alternative wages" (inasmuch as strikers were commonly paid wages in 1988 and not in 1990), leading to a reduction in workers' relative bargaining power and, therefore, to lower expected wage settlements, *ceteris paribus*.

*Empirical Models.* We first examine the determinants of the percent increase in monthly wage settlement rates for the years 1988 and 1990. The term  $w_i$  designates the  $i$ th bargaining pair's percent increase in monthly wage settlements in 1988 and 1990, and it is a function of strike incidence, strike duration and other variables discussed later. Thus, the cross-section models estimated for 1988 and 1990 take the form:

$$w_i = \alpha + X_i \beta + \mu_i,$$

where  $\alpha$ , the intercept term, is the estimated mean value of the percent increase in negotiated monthly wages,  $X_i$  is a vector of the

cross-sectional explanatory variables for the  $i$ th bargaining pair,  $\beta_i$  is a vector of slope coefficients and  $\mu_i$  is the  $i$ th bargaining pair's specific disturbance term. The central prediction posited here is that  $w_i$  and the strike incidence and strike duration coefficient estimates will be negative for 1988 and 1990, after controlling for the other variables in the model.

Next, we pool the bargaining pair data for 1988 and 1990, changing the subscripts on the dependent and independent variables to  $w_{ij}$ ,  $X_{ij}$  and  $\mu_j$  to indicate that the variable in question pertains to the  $i$ th bargaining pair and the  $j$ th time period, where  $j = 1988$  and  $1990$ . Recalling that between 1988 and 1990, most Korean employers switched to the "no work, no pay" strike policy, we expect the estimated wage settlement rates to fall, *ceteris paribus*. To examine this prediction we add a year-specific dummy variable to our models, creating two intercept terms, one for 1988 and one for 1990. Coding the year-specific dummy variable as  $D_j = 1$ , if  $j = 1990$ , and  $D_j = 0$ , if  $j = 1988$ , the dummy's estimated coefficient is expected to be negative.

However, this technique for examining whether the inter-temporal change toward a "no work, no pay" strike policy (i.e., toward falling alternative wages and falling relative bargaining power of workers) is associated with a falling union resistance curve must be considered preliminary. Other variables that are unobserved, and that may affect  $w_{ij}$ , also might have changed between 1988 and 1990, confounding an unambiguous interpretation of our year-specific dummy variable's coefficient estimate. Even though this problem is omnipresent in econometric studies like this, we call attention to the fact that between 1988 and 1990 the Korean economy was in the midst of a remarkable economic boom, with inflation in check (J.-W. Lee, 1997). Nevertheless, as we pointed out in section II, real wage growth in Korea's manufacturing sector fell between 1988 and 1990 and so did nominal wage settlement rate increases in our samples, falling from 15.7 percent in 1988 to 14.01 percent in 1990 (see note 2, table 2). Therefore, to the extent that expected settlement wage rates in our samples fell between 1988 and 1990, *ceteris paribus*, we can eliminate

a deteriorating macro economy as the explanation, leaving the “no work, no pay” strike policy change as a viable explanation.

Summarizing the previous discussion, the pooled data models that are estimated take the general form:

$$w_{ij} = \alpha + \beta D_j + X_{ij} + \mu_j,$$

where  $D_j$  is the above-referenced year 1990, dummy variable and the estimated  $\beta$  is expected to be negative. Further, in this analysis, the term  $X_{ij}$  is expanded to include  $\gamma_1 S_{ij} + \gamma_2 S_{ij} D_j + \gamma_3 L_{ij} + \gamma_4 L_{ij} D_j + \dots + \dots$  in some of the estimated models. The variables in this expansion denote, respectively: a strike incidence dummy variable coded as 1, if the  $i$ th bargaining pair experienced a strike in year  $j$ ; the strike incidence variable interacted with the year 1990 dummy variable; an unconditional strike duration variable coded as 0 if the  $i$ th bargaining pair does not experience a strike in year  $j$  and coded as the length of strike measured in days if the  $i$ th bargaining pair does experience a strike in year  $j$ ; and the unconditional strike duration variable interacted with the year 1990 dummy variable. In the model specifications which include the interaction terms, the assumption that the  $\gamma_k$ ,  $k = 1$  and 3, coefficients are constant between 1988 and 1990 is dropped.

Fixed effect models that control for cross-sectional differences in bargaining pair wage settlements cannot be estimated in the present study because while the bargaining pairs in the 1988 and 1990 sample sets overlap, they are not identical and the confidentiality conditions imposed on our access to these data prevented us from matching common bargaining pairs across the samples. Consequently, it could be argued that the year-1990 dummy variable coefficient estimates and interaction terms for 1990 result from the change in the samples, rather than from the change toward the “no work, no pay” strike policy. Fortunately, however, the manufacturing sector of each bargaining pair can be identified, permitting the estimation of sector level fixed-effect models. Thus, in the last part of our empirical

analysis, coefficients are estimated of the effect of strike duration interacted with several manufacturing sector dummy variables on wage settlements for 1988 and 1990, holding constant other factors. Assuming that bargaining pairs' within the same manufacturing sector probably behave similarly with respect to wage negotiations, a finding that these interaction terms miss statistical significance across both years supports the conclusion that the models' inter-temporal coefficient estimates are not an artifact of the heterogeneous data samples.

#### **IV. Samples and Variable Definitions**

Our 1988 and 1990 data sets were compiled independently by the Korea Labor Institute, a research branch of the Ministry of Labor. The 1988 data are from a survey of 217 firms in Korea's nine two-digit manufacturing sectors; whereas, the 1990 data are from a survey of 269 firms in three two-digit manufacturing sectors: namely, Textiles, Apparel and Leather; Chemicals, Petroleum and Coal Products; and Basic Metal Products.<sup>22</sup> While the two sampling universes differ, many of the questions used in the two surveys relate to similar concepts. Thus, both surveys have the following variables in common: the percent increase in settlement wage rates; whether a strike occurred; the strike's duration; the number of workers; when the firm was first unionized; and whether there was intra-firm union conflict. All of these variables, plus the year-1990 dummy variable, are included as control variables in the pooled 1988 and 1990 models that appear in table 3.

Due to space limitations, the coefficient estimates of the control

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22. The nine two-digit manufacturing sectors are as follows: Food, Beverage and Tobacco; Textile, Apparel and Leather; Wood and Wood Products; Paper and Paper Products; Chemical, Petroleum and Coal Products; Nonmetallic and Mineral Products; Basic Metal Products; Machinery and Equipment; and Other Manufacturing Products.

**Table 1.** List and definition of independent variables

Independent Variables	Definitions
<b>A. Variables Common to 1988 and 1990 Samples</b>	
• Strike dummy	1 = strike
• Unconditional strike duration	Number of days of strike; 0 if no days lost due to strikes
• Date unionized:	
Non-union in reference group	
Dummy 1	1 = unionized before 1-1-80
Dummy 2	1 = unionized between 1-1-80 & 6-29-87
Dummy 3	1 = unionized after 6-29-87
• Labor force size	Firm's total employment in 1,000s
• Intra-firm union rivalries	1 = experienced intra-firm union conflict within previous two years
<b>B. Variables Unique to 1988 Sample</b>	
• Previous wage	Ln of firm's average monthly wage in 1987
• Previous wage increase	Percent increase in firm's wages in 1987
• Previous year strike dummy	1 = strike in 1987
• Previous year per capita revenues	Ln of firm's sales minus production costs divided by total employment in 1987
Industrial relations department dummy	
No IR departments in reference group	
Dummy 1	1 = IR department predates 1-1-80
Dummy 2	1 = IR department established between 1-1-80 and 6-29-87
Dummy 3	1 = IR department established after 6-29-87
• Union's bargaining skill	1 = union rates own skill as satisfactory
• Lawfulness of union's activities	1 = firm rates union's activities as legal
<b>C. Variables Unique to 1990 Sample</b>	
• Previous year wage bargaining "gap"	Difference between union's and firm's initial percent wage increase proposals
• Previous year strike dummy	1 = strike in 1989
• Previous year per capita profits	Value added minus production costs divided by total employment in 1989
• Month bargaining began	Months coded sequentially, 1, 2, 3, ...
• Strike "notice"	1 = union filed a strike notice but did not strike
• Years unionized	Number of years since unionized
• Union penetration rate	Union membership divided by total employment
• Union's bargaining skill	1 = firm rates union's skill as satisfactory

variables are not presented, except in the case of the pooled data results that are shown in table 3. Table 1 contains definitions of all of the paper's independent variables. Statistics describing the dependent and reported variables appear in the second note and first analytical column of tables 2 and 3.<sup>23</sup>

In Korea, "large" firms are those with more than 300 employees. Indeed, only 1.5 percent of all firms employing five or more workers were so classified in 1988 and 1990.<sup>24</sup> In absolute terms, there were only 2,104 and 2,145 firms with more than 300 employees in 1988 and 1990, respectively, and in the late 1980s only 250 firms, Korea's chaebols, employed more than 1,000 workers. In contrast, the weighted average employment size of the firms in our two data sets is 1,381. Thus, our samples are of Korea's larger firms, a point that warrants attention because these organizations, Korea's "pattern setters", are the ones to which the government and the Korean Employers' Federation went to first when seeking cooperation and adoption of centrally-designed guidelines, i.e. "no work, no pay" policy. For this reason, the data used in our pooled analysis should provide a somewhat probable basis upon which to examine whether the argument that conversion to a "no work, no pay" strike policy had the effect of shifting the union resistance curve downward.

## **V. Empirical Results**

Estimations of the individual year wage settlement models are presented in table 2 for the sample years 1988 and 1990, respectively. Models (1) and (2), respectively, add the strike incidence dummy variable and the unconditional strike duration variable separately, and in model (3) both of these measures of strike activity are included. The

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23. Upon request, the authors will provide a table of the means and standard deviations of all the variables used in this paper.

24. Ministry of Labor, 1990, pp. 32 - 33.

models in each year were estimated with a constant term, manufacturing sector fixed effects (eight in 1998 and two in 1999) and as previously indicated, a number of other control variables.

**Table 2.** 1988 and 1990 wage settlement coefficients  
(Standard errors in parentheses)

Independent Variables <sup>1</sup>	Mean(SD)	Dependent Variable: Wage Settlement Rate Increase <sup>2</sup>		
		Model (1)	Model (2)	Model (3)
1988	Strike Dummy	.19 (.39)	3.916*** (1.079)	3.030** (1.241)
	Unconditional	3.00		.119*** (.039)
	Strike Duration	(10.48)		(.045)
	F-statistic		3.199	2.970
	Adj. R-square		.190	.173
	N	217	217	217
1990	Strike Dummy	.20 (.40)	3.411*** (.878)	4.558*** (1.033)
	Unconditional	3.74		.009 (.027)
	Strike Duration	(12.29)		(.031)
	F-Statistic		3.157	1.805
	Adj R-Square		.088	.035
	N	269	269	269

- Note (1) Each model for 1988 includes a constant term and the following additional control variables: ln 1987 monthly wages; percent increase in 1987 monthly wages; 1987 strike dummy; labor force size; ln 1987 per capital revenues; three categorical dummy variables for year an industrial relations department was established, if any; three categorical dummy variables for year the firm was first unionized, if at all; intra-firm union rivalry dummy; union’s bargaining skill dummy; legality of union’s activities dummy; and eight categorical manufacturing sector dummy variables. Each model for 1990 includes a constant term and the following additional control variables: 1989 wage bargaining “gap”; 1989 strike dummy; 1990 strike “notice” given but no strike occurred dummy; labor force size; 1989 per capita profits; years unionized; union penetration rate; intra-firm union rivalry dummy; union’s bargaining skill dummy; and two categorical manufacturing sector dummy variables.
- (2) The dependent variable is the percent increase in monthly wage settlements (which includes wages, fixed bonuses and other allowances). The means of the dependent variable for 1988 and 1990 are 15.7 and 14.01 percent, respectively. Standard deviations of the variable are 5.84 and 5.08 percent, respectively.
- (3) Asterisk \* indicates  $p < .1$ ; \*\*  $p < .05$ ; and \*\*\*  $p < .01$ .

The wage settlement models that appear in table 3, are based on the pooled 1988 and 1990 data analysis. The estimated models (1) through (4) in table 3 include a year-1990 dummy variable, several reported control variables and the models are sequentially presented to incrementally add: first, the strike incidence and strike duration variables; second, the strike incidence variable interacted with the year-1990 dummy variable; third, strike duration variable interacted with the year-1990 dummy variable; and fourth, both the strike and strike duration variables are interacted with the year-1990 dummy variable. Each model in table 3 also includes an unreported constant term.

**Table 3.** 1988 and 1990 pooled wage settlement coefficients  
(Standard errors in parenthesis)

Independent Variables <sup>1</sup>	Mean (SD)	Dependent Variable: Wage Settlement Rate Increase <sup>2</sup>			
		Model (1)	Model (2)	Model (3)	Model (4)
Year 1990 Dummy (YD)	.55 (.50)	-2.010*** (.543)	-1.776*** (.620)	-1.511*** (.569)	-1.742*** (.615)
Strike Dummy (SD)	.20 (.40)	3.744*** (.763)	4.310*** (1.024)	3.718*** (.758)	2.875*** (1.139)
SDxYD	.11 (.31)		-.966 (1.233)		1.495 (1.508)
Unconditional Strike Duration(USD)	.41 (11.54)	-.005 (.026)	-.004 (.026)	.071* (.038)	.088** (.041)
USD x YD	2.07 (9.33)			-.117*** (.043)	-.147*** (.053)
Unionized Dummy <sup>3</sup>					
Before 1-1-80	.27 (.45)	2.052** (.821)	1.962** (.829)	1.837** (.819)	1.921** (.824)
Between 1-1-80 and 6-29-87	.23 (.42)	1.260 (.895)	1.105 (.917)	.909 (.899)	1.058 (.911)
After 6-29-87	.34 (.47)	.898 (.815)	.805 (.823)	.631 (.815)	.701 (.818)

Intra-firm Union Rivalry Dummy	.20 (.40)	.057 (.622)	.028 (.623)	-.052 (.619)	-.035 (.619)
Labor Force Size (1000)	1.31 (2.91)	-.096 (.084)	-.096 (.084)	-.099 (.083)	-1.000 (.083)
F-Statistic		8.739	7.830	8.702	7.930
Adj R-Squared		.113	.112	.125	.125
N		486	486	486	486

- Note: (1) Each model includes a constant term.  
 (2) The dependent variable is the percent increase in monthly wage settlements (which includes wages, fixed bonuses and other allowances). The mean and standard deviation of the dependent variable are 14.77 percent and 5.51 percent, respectively.  
 (3) Non-unionized is in the reference group.  
 (4) Asterisk \* indicates  $p < .1$ ; \*\*  $p < .05$ ; and \*\*\*  $p < .0.01$

The “incomplete information reason” for strikes predicts that wage settlements and strike incidence ought to be negatively correlated. This prediction is not supported by model (1) and model (3) results shown in table 2. In each year, the strike incidence coefficient is positive, highly significant, and they share a common order of magnitude. The four models shown in table 3 depict a similar array of results, using the pooled 1988 and 1990 data. The magnitude of the strike incidence coefficient estimates ranged from a low of 2.875 (table 3, model (4)) to a high of 4.558 (table 2, model (3) of year 1990).

However, the addition of the unconditional strike duration variable to the models that include the strike incidence variable (i.e., model (3) in table 2) produces very different results.<sup>25</sup> Namely, that the correlations between wage settlements and conditional strike duration are negative, as predicted. Note that while strike duration is not significantly correlated with wage settlement rates in 1988, it is significantly negative in 1990. The estimated unconditional strike duration coefficient of -.065 in 1990 is evidence that the union

25. Strike incidence is excluded from model 2, table 2. The estimated coefficients on conditional strike duration in these models are positive for both years, although the 1990 coefficient is not statistically significant.

resistance curve is negatively sloped. This estimate corresponds to an elasticity of wage settlements with respect to strike duration of  $-.017$  (evaluated at the point of means). This implies that if the number of mean strike days were to double from about 3.5 to 7, monthly wage settlement increases would fall by 17 percent. The 1990 results suggest that as strike duration increased, unions in Korea softened their resistance to lower wage offers in tandem with the conclusion that the firms in question were not flush with profits.

Our finding of a negative correlation between wage settlements and unconditional strike duration in 1990 is reinforced by the results in table 3. In models (1) and (2), the strike duration coefficients are negative, even though they miss statistical significance. In models (3) and (4), where the strike duration variables are interacted with the year-1990 dummy variable, it is clear that between 1988 and 1990 a change in the sign of the slope of the estimated union resistance curve occurred. In 1988, the correlation between wage settlements and strike duration was significantly positive; however, by 1990 the correlation became significantly negative.

Thus, after controlling for inter-temporal fixed effects, the estimated unconditional strike duration coefficient is  $-.059$  in 1990 (i.e., the difference between the coefficients  $.088$  and  $-.147$  in table 3, model (4)). The corresponding wage settlement - strike duration elasticity is  $-.10119$ , implying that a doubling in the number of days lost due to strike will cause a ten percent reduction in rate of monthly wage increases. Therefore, it appears that beginning in 1990 Korea's unions began to use strikes to make inferences about the profitability of larger firms, who managed to conceal information about their profits from public view.

As previously observed, information about a firm profits are less readily available to unions in Korea, than in the West. Thus, we expect our examination of the wage settlement - strike relationship to yield more encouraging indication of negatively sloped union resistance curves than are found in studies of western economies that also report estimations of resistance curves.<sup>26</sup> Of specific significance are studies

by McConnell (1989) and Card (1990) who use large panel micro data to examine whether the union resistance curve is negatively sloped.

Using collective bargaining contract data on Canadian bargaining pairs spanning the years 1964-1985, Card found that strike incidence had a significantly positive effect on wage settlements, without controlling for unconditional strike duration: a result, incidently, that parallels our own. Similarly, without controlling for strike incidence, Card also found an insignificant positive correlation between wage settlements and strike duration (except for strikes of very long duration). Whereas, our 1990 and 1988-1990 pooled data estimates point to statistically significant negatively sloped union resistance curves, after controlling for strike incidence.

Using US bargaining pair data on real wages negotiated between 1970 and 1981, McConnell found that wage settlements and strike incidence are insignificantly positive, in models that control for unconditional strike duration, but may or may not control for bargaining pair effects and, bargaining pair and year effects. Further, excluding control for unconditional strike duration but including bargaining pair effects, McConnell found this relationship to be insignificantly negative. In line with our results, neither Card nor McConnell were able to offer compelling statistical support for the proposition that wage settlements and strike incidence are negatively correlated.<sup>27</sup> However, with respect to the wage settlement and strike duration relationship, McConnell's examination of US data does disclose a negatively sloped union resistance curve, but only after controlling for bargain pair effects or, bargaining pair and year effects.

In section II we observed that by adding the year-1990 dummy

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26. Tests of the effect of incomplete information on strike behavior has also been done "indirectly" by regressing strikes on measures of "unobserved" firm profitability, *ceteris paribus*. For example, see Tracy (1987) using US data; Booth and Cressy (1989) and Ingram, Metcalf and Wadsworth (1993) using UK data; and Card (1990) using Canadian data.

27. Also refer to endnote 2 where other contradictory wage settlement - strike incidence findings are reported.

variable to the 1988-1990 pooled data models, we can estimate an indicative measure of the inter-temporal effect of the “no work, no pay” strike policy on wage settlements. This policy should temper relative union bargaining power as manifested by a downward shift in the union resistance curve. Section II also discussed this conversion as if it were an inter-temporal reduction in alternative wages (e.g., as if caused by weakening labor market conditions), which would cause the relative bargaining power of unions to fall. As a consequence, we hypothesized that the year-1990 dummy variable’s coefficient should be negative. This prediction is supported by table 3’s findings.

The year-1990 dummy variable coefficient in each model in table 3 is highly significant and negative. The estimates range in value from -2.010 to -1.511. Model (4)’s year 1990 dummy variable coefficient estimate is -1.742, implying that the conversion to the “no work, no pay” strike policy resulted in an approximate two percentage point reduction in nominal monthly wage settlement increases, other factors held constant.

However, table 3’s pooled data findings does not control for the bargaining pairs fixed effects because the 1988 and 1990 samples were not identical, raising the possibility that the negative correlation between wage settlements and year-1990 dummy variable are spurious: arising, as it were, from the change in samples and not from the conversion to the “no work, no pay” strike policy. Addressing this concern leads us to the results in table 4. The 1988 and 1990 samples of bargaining pairs were drawn from nine and three two-digit manufacturing sectors, respectively, which can be readily identified. With this information, the model (4) cross-sectional equations appearing in table 2 were re-estimated for each year, but with the addition of variables that interact unconditional strike duration with the relevant manufacturing sector dummy variable.

**Table 4.** Wage settlement coefficients with manufacturing sector fixed effects: 1988 and 1990<sup>1</sup> (Standard errors in parenthesis)

Independent Variables	Dependent Variable: Wage Settlement Rate Increase	
	1988	1990
Strike Dummy	2.571* (1.525)	4.521*** (1.042)
Unconditional Strike Duration (USD)	.334 (.295)	-.077*** (.036)
USD x Sec. 31 Dummy	.250 (.688)	
USD x Sec. 32 Dummy	-.599 (.854)	.028 (.059)
USD x Sec. 33 Dummy	.003 (.871)	
USD x Sec. 34 Dummy	.901 (1.103)	
USD x Sec. 35 Dummy	-.469 (.568)	.065 (.084)
USD x Sec. 36 Dummy	-.971 (1.970)	
USD x Sec. 37 Dummy	(USD = zero)	
USD x Sec. 38 Dummy	-.265 (.288)	
F-statistic	2.512	2.878
Adj. R-Squared	.178	.095
N	217	269

Note: (1) In addition to the reported independent variables, the 1988 and 1990 models also include the control variables listed in footnote 1 in tables 2 and 3, respectively. The coded 1988 manufacturing sectors are: 31 = Food, Beverage and Tobacco (18 observations); 32 = Textile, Apparel and Leather (47); 33 = Wood and Wood Products (11); 34 = Paper and Pulp Products (5); 35 = Chemical, Petroleum and Coal Products (22); 36 = Nonmetallic and Mineral Products (10); 37 = Basic Metal Products (10); 38 = Machinery and Equipment (81); and 39 = Other Manufacturing (13) (the reference group). The coded 1990 manufacturing sectors are: 32 = Textile, Apparel and Leather (64); 35 = Chemical, Petroleum and Coal Products (73); and 37 = Basic Metal Products (132) (the reference group). Finally, the 1988 and 1990 models were estimated with a constant term.

(2) Asterisk \* indicates  $p < .1$ ; \*\*  $p < .05$ ; and \*\*\*  $p < .01$ .

None of the 1988 and 1990 interaction term coefficients in table 4 are statistically significant. This implies the absence of significant bargaining pair effects, assuming that each sector and the bargaining pairs therein behave similarly with respect to the wage settlement - strike relationship. These results significantly ameliorate our concern that the year-1990 dummy variable coefficient estimates are spurious. Moreover, it could be argued that our year-1990 dummy variable coefficient estimates are not measuring the effect of the spread of the "no work, no pay" strike policy on wage settlements; rather, they are measures by some other "unobserved" factors that are correlated with the spread of this policy's adoption and that negatively affect settlement wages. A likely candidate-factor for falling settlement wage increases between 1988 and 1990 would be a weakening of the Korean economy which, however, was expanding as noted in section III. Consequently, the year-1990 fixed effect estimates reported in table 3 offer strong preliminary, but not conclusive, support for the proposition that the conversion from a "no work, yes pay" to a "no work, no pay" strike policy diminished unions' relative bargaining power and reduced negotiated wage settlements, *ceteris paribus*.

## **VI. Summary and Conclusions**

Korea's industrial relations have been in flux for decades. Indeed, it was not until 1987 that unions began to function as independent agents, representing the interests of workers and having the ability to strike more freely. These dynamics ultimately led to further, and the latest round of, liberalization of Korean industrial relations in 1997. In the years immediately followed the 1987 turn toward free collective bargaining, the number of unions, collective bargaining contracts and strikes began to increase dramatically. Moreover, at that time Korean firms were uniquely able to keep information about their profits private and they pursued a long-held practice of paying striking workers.

To keep information about profits away from unions suggests that Korea's unions might have used their newly won strike rights as a tactic for making inferences about firm profits, and, if so, wage settlements and strikes ought to be inversely related. We empirically examined this relationship using Korean data sets for the years 1988 and 1990. Furthermore, another of Korea's immediate post-1987 innovations in industrial relations, was that firms came under enormous pressure to stop paying striking workers and to adopt a "no work, no pay" strike policy. By 1990 the vast majority of Korea's firms had adopted this new strike policy, led by the larger firms in Korea's manufacturing sector. We also preliminarily examined the effect of this change on the union resistance curve, hypothesizing that it shifted downward between 1988 and 1990.

Studies based on data from western economies have found little support for the argument that the union resistance curve is negatively sloped. However, the assumption that firm-specific information about profits is private is far more tenuous in the West than in Korea. As a consequence, our results are relatively more supportive of Hicks' proposition. Like McConnell who used US data, we found rather significant support for a negative correlation between settlement wages and strike duration, in both our 1990 manufacturing data set and in our pooled, 1998-1990, manufacturing data set, where there was a positive-to-negative flip-flop in the sign of this relationship between 1988 and 1990. In a sense, to have uncovered a negatively sloped union resistance curve in 1990 but not in 1988, is consistent with the view that the year 1988 followed too closely on the heels of 1987's dramatic upheaval in Korea's labor sector, where most strikes were political and not economic in nature.<sup>28</sup>

Of course, this explanation suggests that 1990 was a normal year

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28. In our 1988 sample, nearly 60 percent of the firms reported having been struck in 1987. In contrast, only 18 percent of the firms in the 1990 sample reported having been struck in 1989. With this level of 1987 strike activism, the year-1988 may also have wrought an encore round of non-economic strikes.

for collective bargaining in Korea: hence, our significant estimates of negatively sloped union resistance curves. Implicitly, this explanation begs for more Korean-based research using bargaining pair data on settlement wages and strike duration from other normal years (1992, 1993, ... , 2001) to test the robustness of the idea that limited information about profits is one reason unions strike.

Our examination of the pooled data showed that Korea's wage settlements were lower in 1990 than they were in 1988, *ceteris paribus*. While this conclusion is admittedly preliminary, the fact that Korea's manufacturing firms generally changed from a "no work, yes pay" strike policy to a "no work, no pay" strike policy between 1988 and 1990, has to be considered a leading explanation for the observed downward shift in the union resistance curve. Clearly, after this policy change, it became relatively more costly for workers to strike. Korea's wage settlements-strike relationship and how it changed may well inform policymakers in other emerging economies, i.e. Mexico and other Latin American countries, that are experiencing a spread of democratic institutions and labor rights. Of special significance is understanding Korea's industrial relations experiences during the 1987 - 1990 period - a time when Korea transitioned toward a free collective bargaining system.

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