

BARGAINING ABOUT WAGES:

EVIDENCE FROM SPAIN

Universitat Pompeu Fabra

1994



**BARGAINING ABOUT WAGES:
EVIDENCE FROM SPAIN**

**DEPARTAMENT D'ECONOMIA
FACULTAT DE CIÈNCIES ECONÒMIQUES I EMPRESARIALS
UNIVERSITAT POMPEU FABRA**

**TESIS DOCTORAL
AUTOR: SERGI JIMÉNEZ MARTÍN
DIRECTOR: DR. JAUME GARCÍA VILLAR**

SETEMBRE DE 1994



ACKNOWLEDGMENTS

I wish to thank my supervisor for his help during many years. His comments and suggestions have largely contributed to the improvement of most of this thesis. I wish also to thank him for his continuous support in getting grants and financial help.

I owe special thanks to Javier Andrés and José Maria Labeaga for contributing to the improvement of several parts of this thesis and to Ferrán Sancho for his continuous encouragement.

The work has also benefitted from the comments of Manuel Arellano, Alan Manning, Albert Marcet and Josep Lluís Raymond as well as seminar audiences at UPF and UAB (Barcelona), UNED (Madrid), UV (Valencia), UCL (London) and the AEA conference at Aix-en-Provence. Josep Manel Comajuncosa, Xavier Cuadras, Angel López and William Orr have also contributed to the improvement of the quality of this work.

I am also very grateful to all the PhD students at UPF. Their continuous dedication to research (unshakeable in the face of discouragement) has encouraged me to keep up my work.

Financial support from the CIRIT of the Generalitat de Catalunya for stays at the Centre for Economic Performance, LSE, London (EE:91/1-183), at Carnegie Mellon University, Pittsburgh (EE:92/1-164) and at the University College of London (EE:93-160) and a grant from the Fondo para la Investigación Económica y Social (FIES) are gratefully acknowledged.

I would like to express my immense gratitude to Montse. She has offered me all the support and love I have needed to finish my work.

Finally I owe my gratitude and this work to my parents and family, which have patiently encouraged and supported my education.

A mis padres

CONTENTS

| | |
|--|----|
| ACKNOWLEDGMENTS | 1 |
| 1. INTRODUCTION AND SUMMARY OF FINDINGS | |
| a. Objectives | 6 |
| b. Data and econometric methods..... | 14 |
| c. Main findings..... | 20 |
| References..... | 23 |
| 2. A PICTURE OF WAGE BARGAINING AND CONFLICTING ACTIVITY IN SPAIN DURING THE 80'S. | |
| I. Introduction | 26 |
| II. Socioeconomic context and negotiation framework | 28 |
| a. The Macroeconomic scenario..... | 29 |
| b. Negotiation framework and strike regulation..... | 31 |
| III. Industrial action | |
| a. Unions, coverage and incidence..... | 34 |
| b. Evidence about wage increases..... | 37 |
| c. Evidence about work stoppages activity..... | 42 |
| IV. Wages, wage increases and contract strikes: | |
| Evidence from the NCGE..... | 47 |
| a. Contract strikes incidence and duration in the 1985-1990 period..... | 48 |
| b. Claim, offer and agreement..... | 50 |
| c. Evidence on the correlation among wage outcomes and length of negotiation, delay, strike incidence and duration..... | 52 |
| V. Final comments | 55 |
| Tables | 57 |
| References | 80 |

3. THE WAGE SETTING PROCESS IN SPAIN: IS IT REALLY ONLY ABOUT WAGES?

| | |
|--|-----|
| I. Introduction..... | 83 |
| II. Economic model..... | 90 |
| a. A simple employment equation..... | 93 |
| b. Ad hoc wage structure considerations..... | 95 |
| III. Econometric specification..... | 98 |
| IV. Empirical results. | |
| a. The common wage equation results..... | 104 |
| b. Extensions for the manufacturing sector's wage equation.. | 109 |
| c. The employment equation..... | 111 |
| V. Summary of findings..... | 117 |
| Tables..... | 121 |
| Appendix..... | 129 |
| References..... | 134 |

4. THE WAGE EFFECT OF AN INDEXATION CLAUSE: EVIDENCE FROM SPANISH MANUFACTURING FIRMS.

| | |
|---|-----|
| I. Introduction..... | 138 |
| II. The data..... | 144 |
| III. A simplified reference model..... | 146 |
| IV. The econometric specification..... | 154 |
| a. The COLA decision..... | 155 |
| b. The non-COLA wage increase equation..... | 157 |
| c. The COLA wage increase equation..... | 161 |
| V. Empirical results. | |
| a. The COLA decision..... | 165 |
| b. The non-COLA wage increase equation..... | 166 |
| c. The COLA wage increase equation..... | 169 |
| d. Ex-ante wage increase differentials..... | 174 |
| VI. Concluding remarks..... | 178 |
| Tables..... | 181 |
| Appendix A..... | 189 |
| Appendix B..... | 197 |

| | |
|-----------------|-----|
| References..... | 204 |
|-----------------|-----|

**5. INCIDENCE, DURATION AND THE WAGE INCREASE EFFECT OF A STRIKE:
EVIDENCE FROM THE LARGE FIRMS SURVEY.**

| | |
|--|-----|
| I. Introduction..... | 207 |
| II. The theoretical foundations..... | 213 |
| III. The empirical evidence on strike decision, duration and wages..... | 216 |
| IV. Economic and econometric framework..... | 224 |
| V. Econometric specification. | |
| a. Strike decision..... | 231 |
| b. Work stoppages duration..... | 235 |
| c. Claim and offer..... | 236 |
| d. Wage increase determination..... | 239 |
| VI. Empirical results. | |
| a. Data and variables..... | 242 |
| b. Strike decision and duration of strikes..... | 247 |
| c. Initial claim and offer..... | 251 |
| d. The wage equations..... | 253 |
| e. Strike non-strike wage differentials and the wage decline..... | 258 |
| VII. Summary of findings and main conclusions..... | 260 |
| Tables..... | 263 |
| Appendix..... | 275 |
| References..... | 281 |

CHAPTER 1

INTRODUCTION AND SUMMARY

a. Objectives.

The process of wage determination is an important economic institution. From a macroeconomic point of view, it determines the impact that any exogenous perturbation has on the output and employment levels. From a microeconomic point of view, the degree of indexation of the wage with respect to the productivity gains of the firm is especially relevant. If it is very low, productivity increases are translated into employment increases. On the contrary, if it is very high they are translated into higher wages.

The first fact to note is that wages are set in a process of bargaining amongst two agents: the firm and, normally, the workers council with distinct (and non-null) monopolistic power in the labour market. In such a context, the traditional competitive model of the labour market, in which both the wage and the employment level are determined by the technological parameters of the firm and the parameters of the utility function of the workers, fails to explain phenomena such as the wage rigidity and/or the persistence of the unemployment.

In our opinion there are at least two problems that should be

considered when analyzing wage determination. On the one hand, the bargaining structure and the institutional features of the specific labour market in question. On the other hand, the consideration of complementary negotiation issues (i.e. hours, employment, cost of living allowance (COLA)) and/or strategic actions (strikes and delays).

The bargaining structure exercises a greater influence over the outcome of the negotiation process. The bargaining context in Spain is such that there is, simultaneously, negotiation both at aggregate level (industry or economy wide) and at firm level¹. The issues subject to bargaining in those levels are sensibly different. Whilst at aggregate level negotiation concentrates, in most cases, on wage increases, hours and cost of living allowance, at firm level the negotiation of wage complement and manning ratios is also of crucial importance. As a consequence, it could be the case, at least in Spain and similar countries, that wage increases setting does not contain the same information as wage levels setting. These facts suggest the necessity to analyze separately wage levels and wage increases. Our working assumption will be that wage increases are relatively much more closely related to aggregate setting than wage levels.

The institutional features of the relevant collective bargaining system and also the negotiation procedures are extremely important determinants of the negotiated outcome and should be carefully considered. For example there are countries, like Spain, in which it is prohibited to hire replacement workers during a strike. This institutional feature undeniably increments the relative power of the workers during a strike and consequently, all

¹See chapter 2 for a detailed description of Spanish bargaining system and facts. A complementary description may be found in Jimeno (1992).

things being equal, increases the negotiated wage rate. However, we must note that sometimes it is extremely difficult to incorporate them directly into standard models and we must be satisfied with analyzing their incidence *ad hoc*.

There is no *a priori* reason to consider that the analysis of the wage determination in a bargaining context could be isolated from related issues and/or actions, particularly strike threats. Thus, the correct framework for analyzing the wage setting process should consider both related decisions and actions.

The aim of this thesis is to give a better understanding of the wage determination process at firm level in a bargaining context in Spain, paying special attention to the relationship with related bargaining issues and the institutional features. To do this we will analyze, after giving in chapter 2 a brief outline of the bargaining system and recent facts in Spain, three separate models of wage setting. The first (chapter 3) analyzes the possibility of a joint wage and employment bargaining framework and the relevance of the wage structure for explaining wage and employment setting, taking as a point of departure an Insider-Outsider model². The second (chapter 4) concerns the wage increase setting under contingent clauses. Finally, the third (chapter 5), also deals with the wage increase setting but considering the incidence of the strike threat and related issues.

As above mentioned, in chapter 3 we develop and estimate a standard Insider-Outsider model which, under the assumption that the firm and the

²The Insider-Outsider idea was originally developed by Lindbeck and Snower (1988). Our application will closely follow the more recent model by Nickell and Wadhvani (1990).

union solely are negotiating wage levels, is usually known as the Right to Manage Model. Our null model has been extensively empirically analyzed for Spain and other countries and, consequently, our work will permit us to check the robustness of earlier results for Spain³. However, the emphasis of the chapter will be centered on testing the validity of our null hypothesis, i.e. bargaining is only over wages and (among other issues) to respond to the following question: **Does it matter in what form wages are paid?**

It has been extensively assumed in the literature that, though workers' representatives may care about employment, they do not bargain over it. In a recent book, Layard et al. (1991, Ch. 2) argued that the level of employment is of no interest to existing workers. In any case, they care about the risk of layoff, whose level is normally left to management discretion. We would like to test the relevance of such a common assumption in the case of Spain.

To do this task we will follow a very simple proposal by Alogoskoufis and Manning (1991). In few words, it can be stated as follows: If negotiation is only about wages, employment is set unilaterally by the firm and, consequently, is on the firm labour demand curve. In such circumstance, there is a set of variables entering the workers objective function that should not have any direct effect on employment (there is an indirect effect through the wage). Consequently, a test against this null constitutes a test against the assumed hypothesis that bargaining is solely over wages, though we must point out that the alternative hypothesis is not well defined. It might be either some sort of negotiation about employment level if we assume

³See Andrés et al. (1993) for a revision of recent findings.

that the Insider-Outsider framework holds or the well-known efficiency wages model⁴, sometimes forgotten in most of the previous research.

With respect to the second issue, our basic interest will be to show whether or not the wage bill and the base wage contain exactly the same information. And, simultaneously, with respect to the employment equation, we will analyze the relevance of the base wage as a marginal price of the labour. Our methodology will be very simple and is based on the recent work by Wadhvani and Wall (1990), which is founded on the seminal work by Weitzman (1984, 1987). In more detail, to analyze the relevance of the pay structure in the wage and the employment equations we will consider four distinct components of the wage: the base wage, the payments related to firm's performance (variable payments), the tenure payments (fixed payments) and the labour tax.

The wage bill and the base wage equation contain exactly the same information if the rest of the components enters the base wage equation with a minus one coefficient. In such a case, we are able to say that **it does not matter how the wage is paid, it matters how much is paid**. For the employment equation, if the coefficients of the rest of the components of the payroll are not significantly different from zero, we will be able to state that the base wage is the marginal price for the labour. This case, originally suggested by Weitzman (1984,1987) in the context of profit-sharing models, is especially relevant for it implies that flexible pay structure can increase, all other things being equal, the employment level.

Regarding chapter 4 we will formulate and estimate a joint wage

⁴See Layard et al (1991) for a description of the efficiency wages model.

increase and contingent clause⁵ model in a uncertainty context. Since the seminal work by Shavell (1976), there has not been much theoretical or applied work (mainly due to the lack of adequate data). The basic point of the literature is very simple: If the union is more risk averse than the firm⁶ and there are no relevant bargaining costs there is at least one Pareto optimal contract which includes a COLA clause. The firm will agree on such a contract if the union is willing to accept a lower expected real wage in return for the protection clause. Ignoring the possibility of relevant bargaining costs, rejection of the clause could only be justified because the firm is relatively more risk averse than the union.

However, the empirical evidence in Spain (and in other countries) is that only half of the agreements include an indexation clause. Additionally, there is no evidence suggesting that the share of workers that obtain a protection clause get a lower expected ex-post wage. These two stylized facts, hardly explained by the traditional focus, induced us to formulate a very simple model allowing for asymmetric union bargaining power (BP) under the indexed and the non-indexed contract. In our model, rejection to the

⁵A contingent clause is just a function relating the ex-post wage (or the ex-post wage increase) to some price index, usually the CPI index. As a matter of example the usual contingent clause determining the ex-post wage increase (Δw^{eP}) in Spain takes the following expression:

$$\begin{aligned} \Delta w^{eP} &= \Delta w + \theta(\Delta P - PU) && \text{if } \Delta P > PU \\ \Delta w^{eP} &= \Delta w && \text{if } \Delta P < PU \end{aligned}$$

where Δw is the ex-ante wage increase, ΔP is the increment in the price level, $\theta > 0$ is a parameter and PU is an threshold for the increment in the price level.

⁶See Dazinger (1980) for an exposition of the arguments in favour of such maintained assumption. The main argument relies on the fact that there are less opportunities for diversifying human capital against risk than for diversifying a similar amount of other capital.

clause could be due to several sources: The firm is more risk averse than the union and/or the union BP under the COLA contract is sufficiently greater than it is without the clause. Additionally, in our model it is not necessary that the workers with the protection clause have, all other things being equal, a lower expected real wage than workers without the clause.

Our empirical model will pay special attention to the above issue and also, as a major difference from earlier literature (Card (1986) and Prescott and Wilton (1992)), we will carefully consider the unobservability of the provisions⁷ (the most relevant are the inflation threshold wage-price elasticity⁸) which determine the exact form the indexation clause takes.

The main concern throughout our final chapter is the analysis of the relationship between wage increase and strike outcomes. Particularly we will be interested in analyzing the relevance of the set of predictions of one-sided asymmetric information (OSAI) theories given the Spanish institutional features. However, we must point out the extreme difficulty that the process of combining any standard bargaining model and a suitable econometric framework represents. In fact, throughout the chapter no formal theoretical model will be developed, although we will have, in the background, a recent model developed by Card (1990).

The focus of the chapter will be empirical, emphasizing the econometric and testing issues. We will make an exploratory analysis of some relevant bargaining issues: Strike decision and duration, initial bargaining

⁷Although the written contract includes the exact form of the COLA clause the statistical office only records the ex-post wage when the clause is triggered.

⁸The so-called wage-price elasticity is, in general, the derivative of the ex-post wage with respect to the price level.

positions and wage increase setting. Particularly, we will devote special attention to the identification of the determinants of the initial wage increase union's *claim* and the initial *offer* of the firm, emphasizing the amount of information they are, respectively, identifying and revealing; the relationship amongst wage outcome and strike duration, which usually is called the "wage concession curve"; and to the detection of the possibility of selection in wage outcomes induced by strike outcomes.

A recent work by Cramton and Tracy (1992) identifies, in a static context, the determinant of the initial union *claim* and the first firm (counter) *offer*. Simplifying the work a lot, it is stated therein that the initial *claim* is a function of what a unit of labour is worth to the firm. At the same time, it is said that if the firm could make its counteroffer at any time after knowing the first *claim*, it will on balance be accepted by the union and, thus, must be revealing most of the private information of the firm. The Spanish institutional setting is such that the firm must, in cases, make an immediate counteroffer. Thus, we expect to show the firm's OFFER as not revealing much of the firm's information.

The wage concession curve is the major prediction of OSAI (Hayes (1984)) and earlier strike models (Ashenfelter and Johnson (1969), Kennan (1980)). This prediction states that negotiated wage outcomes and strike durations are negatively correlated. However, the evidence about the prediction is unclear. Whereas Farber (1978) and McConnell (1989) support it, Ridell (1980), Lacroix (1986) and Card (1990) do not (in fact, the first two studies have found some evidence in favour of a positive relationship).

The relevance of selection and the possibility of different wage equations for strikers and non-strikers has been recently empirically

confirmed by Stengos and Swindisky (1990). Additionally, a recent theoretical work by Cramton and Tracy (1992), which considers two bargaining threats: delaying the agreement and the strike, suggest the possibility of different solutions for the wage under strike and the wage without strike.

b. Data and econometric methods.

b.1. The data sources.

To cover the above mentioned objectives we have used the most relevant collective bargaining data sources: The "Estadística de Convenios Colectivos" (ECC) and the "Negociación Colectiva en las Grandes Empresas en" (NCGE). The latter is an inquiry into bargaining issues carried out by the Spanish Ministry of Economy and the former is a public record of all the collective agreements about wages increases and related issues carried out by the Spanish Ministry of Labour. Both of the sources mentioned offer the possibility to follow bargaining units (BU) across time, though it requires a considerable effort because neither source identifies clearly each BU across time. In both cases, this work is the first one in which the sources have been used identifying units across time. In the following, we will briefly describe some of the most relevant characteristics of both datasets.

The ECC, which has been used in chapter 4, compiles a small set of variables for each BU that makes a collective bargaining agreement in Spain, because they must be compulsorily registered to become enforceable. The number of collective agreements in the raw dataset in the 1981-1991 is very large (around forty-three thousand observations). We decided to concentrate

the first effort on analyzing data on manufacturing firms. As a result, from the raw dataset (14777 observations) we obtained an unbalanced panel of 1290 negotiation units in the 1981-1991 period. The main characteristics of the resulting sample may be found in the Appendix B of chapter 4.

The data source used throughout chapters 3 and 5 comes from the NCGE, an annual inquiry into bargaining and other working conditions in large Spanish firms (more than 200 employees). There are several characteristics that condition the inquiry. First, the firms' population is constrained to those larger than two hundred workers, which limits the number of eligible firms to three thousand⁹. Second, the percentage of response ranges from a low of a 20 per cent to a high of a 25 per cent¹⁰. Third, the reply to the inquiry is voluntary. And fourth, firms which initially were above two hundred workers are excluded from the population if they are below two hundred employees during three years. Thus, entry and exit of the sample is not random.

Because of the absence of sample randomness and the different structure of large firms with respect to small ones, the findings must be taken with a lot of caution. In fact, large firms have higher wage level, union power, scale economy and capital ratio than small firms. Nevertheless, and in the opinion of the statistical office that makes the inquiry¹¹, it is representative of the population under investigation. Due to the above reasons and the fact that this is the first attempt to deal with the panel

⁹Those three thousand firms employ roughly a third of the Spanish labour force.

¹⁰In terms of employment the percentage is higher (from 4/10 to 5/10). Thus, larger firms tend to reply more often than smaller ones.

¹¹Dirección General de Política Económica. Ministerio de Economía y Hacienda.

we decided to assumed that entry and exit in the sample has no incidence in the analysis.

Despite the inquiry runs since 1978, the available dataset covers a shorter time span of 6 years (1985-1990). Each inquiry provides information about firm main results (sales, profits), employment structure and negotiation by BU. It is important to state that neither the set of variables nor the recording tape are homogeneous across time. Both facts hinder the treatment of the data. Although the data set does not constitute a formal panel data, it is feasible to use some code information to construct an unbalanced panel of firms, which description may be found in the Appendix to chapter 3.

Specifically for chapter 5, we have excluded, from the original sample, firms which did not report information about some key variables such as wages increases or employment. There is also an important share of the records which have missing values for some key pieces of information (wage increase agreement, initial positions and length of the negotiation) that, consequently, have been excluded from the final sample. The characteristics of this sample are described in the Data Appendix of chapter 5.

b.2. Econometric methods.

The structure of our datasets constitutes, in both cases, a typical unbalanced cross section time series of BU (firms in the case of chapter 3). Thus, dynamic panel data methods are fully applicable. These methods will be applied in most of the analyzes of chapter 3 and 5 but not in chapter 4. In the following, we will describe briefly the most relevant estimation

procedures. A detailed explanation will be provided in the corresponding chapter.

Most of the econometric work of chapter 3 and chapter 5 will use an instrumental variables generalized method of moments (GMM) for dynamic panel data models. The main reason for using this class of estimators is that there are some variables which are potentially correlated with the errors¹² of the solutions to the implicit negotiation problems which we have in both chapters. For level models, leads and lags of all the strictly exogenous variables and also lags of the set of variables correlated with the error term (under the assumption that specific effects are irrelevant) are potential instruments. For differenced models, in which, by construction, specific effects vanish, also leads and lags of all the strictly exogenous variables and those dated $t-2$ and earlier lags of the set of variables correlated with the error are potential instruments. In both cases, the condition of no correlation between any instruments and the relevant error term give us a moment restriction¹³. The minimization of the set of moment restrictions defines the GMM estimator. In most of our applications, we will follow the proposal of Arellano and Bond (1991), which is an heterogeneous consistent two stage GMM method for single linear equations. For comparison purposes, we will use a three stage GMM method, following the idea of Holtz-Eakin et al (1988)¹⁴, for estimating a system of equations (wage and

¹²There is also a potential correlation with the unobserved firm or BU specific effect.

¹³In the absence of measurement error in the set of instruments. In the presence of this trouble the condition of no correlation could not be fulfilled. See Biørn (1993) for a discussion of the solution to the problem.

¹⁴In fact, we must remark that the Arellano and Bond (1991) and the Holtz-Eakin et al. (1988) formulations are very similar.

employment equations in chapter 3 and *claim* and *offer* equations in chapter 5).

In Chapter 4 we will opt for estimating a non-dynamic switching model using a standard Probit for modelling the COLA decision and NLS for estimating the wage increase equation under both COLA regimes. Separately, we will estimate a reduced form model (taking into account the possibility of sample selection) in the subsample of triggered clauses to obtain an unconditional prediction for the whole sample of the wage-price elasticity¹⁵, a key variable of our model. The complex structure of the underlined model encouraged us to opt for simplifying estimation methods at least in this first approach. Apart from this, we used the estimates of our model to obtain a sample means evaluation of the implicit ex-ante wage increase differentials induced by the indexation clause.

Specifically for Chapter 5 limited dependent variable models will be used for estimating the reduced form model for the decision to strike and very simple models for the length of the strike. The models for the later will be presented only for illustrative purpose, for the small size of the sample of strikes, so they will not be commented in deep. The models for the former will be carefully considered. Particularly we will analyze a standard Probit model, a conditional Logit (Chamberlain (1980)) and, finally, a linear probability model. The last two models mentioned will permit us to control for the potential unobserved BU specific effects. Both present severe difficulties. For instance, the conditional Logit method has identification problems and the linear probability model method does not

¹⁵Thus, we are avoiding the possibility of having endogeneity troubles when using the observed variable.

guarantee estimated probabilities lying in the zero-one interval. Despite the shortcomings, they permit us to carry out testing on the existence and importance of the BU specific effects in the strike decision model. In this sense, we will use the linear probability model estimates to test the importance of the specific effects in the decision to strike model, following a proposal of Holtz-Eakin (1988), which, to our knowledge is the first time that it has been applied to limited dependent variable model.

Most of the testing work throughout chapter 5 will be based upon the Sargan difference test proposed by Arellano (1993). This test compares the Sargan statistic, which tests for the validity of a given set of instruments¹⁶, resulting from two alternative (usually nested) sets of instruments. As mentioned in Arellano (1993), which extends the work of Holtz-Eakin (1988) for autoregressive models, the test could be used to detect the importance of the specific effects in a levels model. We extend the test to the case in which, apart from the autoregressive term, there is a set of variables which is contemporary correlated with the relevant error term. We are simultaneously testing for the presence of relevant specific effects (as in the Holtz-Eakin proposal) and also for the correlation amongst the explanatory variables and the specific effects (as in the Arellano's proposal).

Finally, we apply (also in chapter 5) a recent proposal by Wooldridge (1994) to test for the presence of relevant selection bias in a panel data context. The main advantage of his proposal is such that the test can be applied to any subsample, in particular to the non-strike sample. This would

¹⁶See Arellano and Bond (1991) for a detailed description of the test in the context of IV-GMM panel data estimators.

be particularly useful in our case, for the problem of attrition which we have in the strike sample which impedes us using it for testing purposes.

c. Main findings.

A detailed exposition of main findings will be provided at the end of each chapter, here we will mention the most relevant findings for each chapter with regard to the negotiation structure.

In regard to chapter 3, in which we will analyze the wage equation and related issues separately for manufacturing and services, the findings suggest a significant but small insider power for the manufacturing sector. The Right to Manage model is rejected for the manufacturing sector and not for services. Finally, although we have not found much evidence in favour of the role of the base wage as a marginal price of labour in either sector, we have shown that the base wage is much more important in services than in manufacturing for employment determination.

Concerning chapter 4 we stress two major findings. On the one hand, we have found sensible differences in the propensity to obtain an indexation clause among nationwide unions (strong unions) and non-nationwide unions (weak unions). On the other hand, we have shown that the sample means contingent compensation is, in general, much greater than the implicit wage differential amongst ex-ante wage both with and without indexation clause. Although we cannot discern whether this is transitory or permanent, we think this fact contributes to explain the wage pressure which has often been argued in Spain as a major source of inflation pressure.

There are several relevant conclusions of the work in chapter 5. Among

other findings, we stress the fact that we found some evidence in favour of OSAI theories in strike decision and in initial bargaining positions setting, for which it has also been shown the relevance of the institutional framework and procedures in determining the observed outcome. With respect to wage setting, we remark the facts that short strikes produce higher wage increases and that there is a negatively slope wage concession curve as predicted by the theory are also important.

Throughout all the chapters we have considered some union variables (particularly the proportion of workers representatives belonging to a given union) to capture any difference in bargaining power amongst unions. Concerning wage increases, we have not found any systematic difference amongst them in chapter 4 and we have found that regional unions obtain lower increases in chapter 5. Concerning wage levels (chapter 3) we have found that the variable representing the UGT union is associated with lower wage and higher employment levels. Jointly, they seem to suggest that the CCOO¹⁷ union adds more pressure to the bargaining process than other unions.

The effect of the strike variables on wage outcomes have been considered throughout chapters 3 (on wage levels) and 5 (on wage increases). In both chapters the set of strike variables have been found relevant (being the services wage equation an exception). However, whilst for services the estimated effect is of the same sign, for the manufacturing evidence is contradictory. In particular, for the latter sector, wage increase analysis suggests a negative relationship among wage increases and strike length. On the contrary, wage levels analysis suggests a positive relationship. Our

¹⁷UGT: General union of workers and CCOO: Workers commissions.

suggestion for further work is to consider more carefully the specification of the set of strike variables, specially strike costs.

As major conclusions on the wage setting process in Spain we would like to stress the implicit sequential bargaining structure and the extreme importance of aggregate setting. The first step of the implicit sequence is the wage increase setting, closely linked to aggregate setting (industry or upper) and to the achievement of the indexation clause. The second step, in which there is the bargaining over wage complements and the compensation for the expected productivity increase, is more closely related to the performance of the firm.

Finally, we would like to remark that aggregate factors have a much greater influence in wage setting than the specific conditions of the firm¹⁸. This structure can have several consequences. For instance, in an economy with null or small labour force mobility (as in Spain) the pressure of unit labour cost will squeeze out of the market, sooner or later, a significant number of firms¹⁹.

¹⁸In fact, contracts in Spain are staggered over a long period of the year. Big contracts (normally industry contracts) are generally settled earlier in the year and are used as a signal by the small units.

¹⁹See Andrés et al. (1993) for a detailed exposition of the argument in the context of a simplified Insider-Outsider model.

References.

- Alogoskoufis, G. and Manning, A. (1991), "Test of Alternative Wage Employment Bargaining Models with an Application to the U.K. Aggregate Labour Market", *European Economic Review*, 35, 1991, 23-37.
- Andrés, J., García, J. and Jiménez, S. (1993), "Indiciación Salarial y Desempleo" in J. Velarde et al (ed), *Empresas y Empresarios Españoles en la Encrucijada de los Noventa*, Ed. Civitas, Madrid.
- Arellano, M. (1993), "On the Testing of Correlated Effects with Panel Data", *Journal of Econometrics*, 59, 87-97.
- _____, and Bond, S. (1991), "Some Test of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations", *Review of Economic Studies*, 58, 277-297.
- Ashenfelter, O. and Johnson, G.E. (1969), "Bargaining Theory, Trade Unions and Industrial Strike Activity", *American Economic Review*, 59, 39-49.
- Biørn, E. (1993), "Panel Data with Measurement Errors" in L. Mátyás and P. Sevestre (eds), *The Econometrics of Panel Data*, Ch. 8, Dordrecht: Kluwer Academic Publishers, 152-195.
- Card, D. (1986), " An Empirical Model of Wage Indexation Provisions in Union Contracts", *Journal of Political Economy*, 94(3), s144-s175.
- _____, (1990), "Strikes and Wages: A Test of an Asymmetric Information Model", *Quarterly Journal of Economics*, 105(3), 625-659.
- Chamberlain, G. (1980), "Analysis of Covariance with Qualitative Data", *Review of Economic Studies*, XLVII, 225-338.

- Cramton, P. and Tracy, J. (1992), "Strikes and Holdouts in Wage Bargaining: Theory and Data", *American Economic Review*, 82(1), 100-121.
- Dazinger, L. (1980), "Risk Sharing in Labor Contracts", *European Economic Review*, 14, 323-340.
- Farber, H. (1978), "Bargaining Theory, Wage Outcomes, and the Occurrence of Strikes", *American Economic Review*, 68, 262-271.
- Hayes, B. (1984), "Unions and Strikes with Asymmetric Information", *Journal of Labor Economics*, 2, 57-83.
- Holtz-Eakin, D. (1988), "Testing for Individuals Effects in Autoregressive Models", *Journal of Econometrics*, 39, 297-307.
- _____, Newey, W. and Rosen, H. (1988), "Estimating Vector Autoregressions with Panel Data", *Econometrica*, 56, 1371-1395.
- Jimeno, J.F. (1992), "Las Implicaciones Económicas de la Negociación Colectiva: El Caso Español", *Moneda y Crédito*, 195, 223-281.
- Kennan, J. (1980), "Pareto Optimality and the Economics of Strike Duration", *Journal of Labor Research*, 1, 77-94.
- Lacroix, R. (1986), "A Microeconomic Analysis of the Effects of Strikes on Wages", *Relations Industrielles*, 41, 111-126.
- Layard, R., Nickell, S. and Jackman, R. (1991), *Unemployment: Macroeconomic Performance and the Labor Market*, Oxford: Oxford University Press.
- Lindbeck, A. and Snower, D.J. (1988), *The Insider-Outsider Theory of Employment and Unemployment*, Cambridge: MIT press.

McConnell, S. (1989), "Strikes, Wages and Private Information", *American Economic Review*, 79, 801-815.

Nickell, S. and Wadhvani, S. (1990), "Insider Forces and Wage Determination", *The Economic Journal*, 100, 496-509.

Prescott, D. and Wilton, D. (1992), "The Determinants of Wage Changes in Indexed and Nonindexed Contracts: A Switching Model", *Journal of Labor Economics*, 10(3), 331-355.

Ridell, C.W. (1980). "The Effects of Strikes and Strike Length on Negotiated Wage Settlements", *Relations Industrielles*, 35, 115-120.

Shavell, S. (1976), "Sharing Risks of Deferred Payments", *Journal of Political Economy*, 84, 161-168.

Stengos, T. and Swidinsky, R. (1990), "The Wage Effects of a Strike: A Selectivity Bias Approach", *Applied Economics*, 22, 375-385.

Wadhvani, S. and Wall, M. (1990), "The Effects of Profits Sharing on Employment, Wages, Stock Returns and Productivity: Evidence from micro-Data", *Economic Journal*, 100, 1-17.

Weitzman, M. (1984), *The Share Economy*. Harvard University Press. Cambridge.

_____ (1987), "Steady State Unemployment under Profits Sharing"
Economic Journal, 97, 86-105.

Wooldridge, J.M. (1994), "Selection Corrections for Panel Data under Conditional Mean Independence Assumptions", Michigan State University, mimeo.

CHAPTER 2

A PICTURE OF WAGE BARGAINING AND CONFLICTING ACTIVITY IN SPAIN IN THE 80'S.

I. Introduction.

The collective bargaining framework is the key institution determining the wage setting process. Until recently there has not been much applied work in Spain analyzing wage determination in a bargaining context²⁰ and, specifically, using microdata. Often, it has been argued that there is no adequate data and/or there is insufficient time series information for such a purpose. Our main purpose throughout this chapter will be draw a picture of wage bargaining using the basic collective bargaining data sources which are available. Particularly it will be argued that they are useful for studying many issues which have not yet been covered in Spain in any empirical study. As examples, we mention the issues which we are going to cover throughout the following chapters: The wage setting process in an Insider-Outsider context, the role of indexation clauses, the duration of strikes and the relationship between wage settlements and contract strikes (particularly, the wage concession curve).

²⁰There is only a significant amount of applied work in the context of the Efficiency wages model (Alonso (1989) and Anchuelo (1989)) and the Insider-Outsider model (Andrés and García (1991), Dolado and Bentolila (1992) and Draper (1993)).

Before going to the above issues, in section II we will describe with some detail the Spanish socioeconomic context in recent years and the current bargaining structure to highlight some peculiarities of the system. Later, in section III we will center on the analysis of the "Estadística de Convenios Colectivos" (ECC), a public source about collective bargaining and the "Estadística de Huelgas y Cierres Patronales" (EH) a public record on work stoppages activity. The first source will be used to comment on the structure of unions and the wage settlements (emphasizing their relationship with indexation clauses). The second second will permit the analysis of strike incidence, emphasizing the comparison with other countries.

The most important difficulty of the sources mentioned is that they are not linked and, consequently, they do not permit the analysis altogether. This difficulty can be solved by using "La Negociación Colectiva en las Grandes Empresas en.." (NCGE) a public inquiry carried out yearly since 1978 by the Spanish Ministry of Economy on several Collective Bargaining issues. In section IV we will take advantage of this inquiry to make a detailed picture on the relationship between wage settlements and contract strikes. Finally, section V summarizes the chapter.

II. Socioeconomic context and negotiation framework.

After General Franco's death in November 1975 there was a large revitalization of union activity in the labour market. We say revitalization because there had been collective agreements and disputes for many years²¹, parallel to the liberalization and growth of the Spanish economy. Before Franco's death there was a very peculiar industrial relations system²² consisting of only one large legal union ("sindicato vertical") grouping both employers and employees in a compulsory way, and some smaller illegal unions like "Comisiones Obreras" (CCOO) that were growing in the meantime.

The first years after this breaking point were very confusing due to the fact that the government's priorities were the political reform and the making of a Constitution (finally signed in 1978). In the meantime, the economic environment did not help the transition because of the impact of the first oil price shock. Thus, in a period in which politics was a priority, the economic policy was hesitant. When the government paid attention to the economic figures in 1977 (Moncloa Pacts), four years after the first oil price shock and two years after Franco's death, they were beyond of any easy control.

In those transition years, previously illegal unions, such as CCOO, and reemerging ones like the "Union General de Trabajadores" (UGT) and the "Confederación Nacional del Trabajo" (CNT) were fighting for a good starting position. We think it would not be a mistake to say that there were two

²¹See Table 2.1 for a brief picture of the main figures since 1970.

²²A good picture of the Spanish bargaining system in those years is given by Fina and Hawkesworth (1984).

clear winners, CCOO, which had the best starting position due to its strong firm level activity over the last years of Franco's regime and UGT, the best politically supported union.

The way to reach a final and stable Industrial Relations law has a clear starting point: The Constitution which specifically called for a law regulating industrial relations. The resulting law, "El Estatuto de los Trabajadores", passed in March 1980, is the outcome of all the previous government legislation, the general new constitutional principles above and, of course, the pressure of the main agents involved in the process. Most people believe that the whole process favoured one union, UGT, due to its stronger party support.

*a. The Macroeconomic scenario*²³.

The Spanish macroeconomic scenario changed abruptly in the middle of the 70's (the most important figures of the Spanish economy are reported in Table 2.2). Those years began with high economy growth (5.9 % on average in 1970-1974) and almost full employment (the unemployment rate was, in 1970-1974, 2.0 % on average), although the path of prices not so good because of the high inflation level (10.3 % average) and the high growth of nominal wages (15.4 % on average). In the following years, 1975-1977, growth fell to 2.3 %, unemployment rose to 4.3 %, inflation doubled to 18.8 % and nominal wages rose even faster than before (22.0 %). The public deficit and the

²³ Andrés et al. (1990), Viñals et al. (1990) and Bentolila and Blanchard (1990) are excellent studies that attempt to explain the problems and also the evolution of the Spanish economy in the last decades, all of them from a macroeconomic point of view.

current balance both reversed from black to red, and the real interest rate was negative during this period.

What could be the main causes of this downturn in the Spanish economy?. Firstly, there was an unfortunate demand expansion policy in the first years of the 70's that was maintained until 1977, three years after the first oil price shock. Secondly, the upward wage pressure started in 1972, by the CCOO union, in an attempt to consolidate its major union position and foreseeing the coming democratic period. The CCOO union not only put pressure on wage levels but also on wage differentials between sectors and occupations, claiming equally distributed increases, in nominal terms, for all the employees. Thirdly, Franco chose a bad time to die, ten years before would have been much better, of course.

At the end of 1977 the government, in conjunction with the main parties and unions agreed to a national settlement, The Moncloa Pacts, which included two key measures. First, a severe, restrictive and non-accommodating monetary policy and second, wage targets were to be based on expected rather than past inflation (the previous years mechanism could explain part of the strong wage pressure in those early years). This general framework of negotiation between the two leading unions, the employers association and the government (not always directly involved) lasted until 1986, meeting every year except 1979 and 1984²⁴. As a result the inflation rate dropped to single figures but the real inflation cuts (all the years

²⁴Although there was no national agreement in this year, it was, in fact, one of the most successful years in controlling wage increases; at two points below inflation for the year, it was the greater effort of the 80's. There was, however, a simple explanation: The severe hours cut in this years for the introduction of the forty hours regulation.

higher than the prefixed target) were always modest. What is the explanation for the failure of anti-inflation fight?. I think that it is basically a question of faulty design of the collective bargaining system (apart from the fact that we have to consider the first years as a learning period). There are some basic failures; for instance, the bad design of aggregate agreements that, practically, never included an increase gap to facilitate the adjustment of small firms. The harmful design of cost of living allowance clauses (COLA) in many cases (we highlight, as an example of bad clauses, the AES-like clause, which in many cases implied an additional inflation pressure²⁵); and, also the spread of the negotiation period.

b. Negotiation framework and strike regulation.

Although it is not easy to describe in few words the legal framework for collective bargaining, we shall try to characterize the key features. The system is "structured" to concentrate most of the aggregate negotiating power in a few unions. Negotiations may take place at several levels, and consequently the degree of centralization is not too high.

The system is based on the workers' councils, elected by the employees at plant level with the following rules (see Table 2.3 for a summary description). Firstly, it discriminates against firms of below 50 workers by imposing a different electoral system. Secondly, the system requires firms

²⁵The AES indexation clause, used frequently since 1985, implies that the proportion between ex-post and ex-ante wage increase is equal to the ratio between observed inflation and inflation target. It is easy to show that if the ex-ante wage is higher than the inflation target the wage-price elasticity is higher than one. Hence, an unexpected price increase might induce additional inflation pressure (see chapter 4).

with more than 250 workers to hold an election over the union list (non-affiliated workers could also be present, backed by a number of signatures three times the number to be filled). Aggregate level negotiations can only be enforced by "representative" unions, that is, by unions that have at least 15 per cent of the workers council members in the unit considered (industry or industry/region).

Despite there are many registered unions, the workers representativeness is concentrated in few unions -two unions, CCOO and UGT, have about 70 per cent of workers representatives in negotiating committees. Moreover, the larger (or more aggregate) is the negotiation unit the more concentrated are the representatives in these two unions. Undoubtedly, this fact is an attempt to simplify and also to favor coordination during negotiations, but it could also increase union power of nationwide unions.

Each aggregate negotiation has general efficacy over all the units below it. For instance, a nationwide industry agreement has efficacy in all the firms in this industry, although any single bargaining unit (BU) has the right to negotiate its particular agreement (see Table 2.4 and Table 2.5, both describing the Spanish negotiation structure). However, the strong aggregate signalling and the link between a firm's workers council and the aggregate workers representatives conditions the bargaining process in small firms (which in most cases take the decision of not to negotiate at all). However, this is not exempt from problems. Firstly, sometimes there could be more than one aggregate agreement affecting a single firm (think, for instance, at national, regional and provincial levels for a single industry, ...). Hence, any single firm would encounter a conflict in choosing any of these. Secondly, normally these industry level agreements are constrained to

only one component of the gross wage (normally base wage and fix components), allowing drifts. And thirdly, the agreements are sometimes too simple, not providing a broad increase gap to enable a better adjustment in different firms.

Along with collective bargaining activity and the consolidation of "illegal" unions like CCOO, there was industrial action, despite strikes being outlawed. Nevertheless, their incidence was not very high (see again Table 2.1). After Franco's death, despite strikes still being forbidden by law (although tolerated), industrial action rose tenfold. We think this fact contributes a lot in explaining the strong wage pressure of those years (1973 to 1978) and is clearly a part of the price of democracy. In fact, until March 1977, there was no strike regulation (Labour Relations Act, RDL 17/77), which was partially modified by the Worker's Statute (March 1980), a Constitutional Court sentence (April 1981) and some other minor decrees on Minimum Service level in strategic industries. Recently, after ten years of discussion a new work stoppages law has been passed. Although it has not substantially modified the previous regulation, we think it has clarified some key points. Solidarity (with other workers) and strategic sectors strikes have been outlawed. A minimum service level in essential industries (like transportation and utilities) has been guaranteed. And finally, it will not be permissible to replace workers during a (legal) strike.

III. Industrial action.

Fortunately, as we have mentioned in section I, there are many available sources for studying the incidence of the collective bargaining system in Spain. Among them, the two basic sources are the "Estadística de Convenios Colectivos" (ECC, Collective Bargaining Statistics) and "La Estadística de Huelgas y Cierres Patronales" (EH, Work Stoppages and Lockouts Statistics)²⁶. The Spanish Ministry of labour keeps a simplified record of all the agreements (since 1981) and all the strikes (since 1986), though they cannot easily be linked. Both provide exhaustive but poor information about negotiation and disputes, respectively. In what follows we will describe the result of the Collective bargaining and strike activity in Spain during the eighties.

a. Unions, coverage and incidence.

It is well established that the Spanish bargaining system, one of the most mixed (strong national level bargaining and also strong firm level bargaining), is the worst best negotiating system²⁷. Firm agreements put upwards wages pressure on the economy, because the agents do not take into account that their actions may affect the general economy conditions²⁸. Hence, the bargaining system contributes to the lengthening of the

²⁶Both sources mentioned are carried out by the Spanish "Ministerio de Trabajo y Seguridad Social".

²⁷See for instance, Layard et al (1991).

²⁸There is a pecuniary externality not internalized in decentralized bargaining but that possible small firm cannot internalize (see Jimeno (1992) for a comment on this).

adjustment period and, indirectly, contributes to the sustaining of a high unemployment level. Main unions, CCOO and UGT, have a clear incentive to put upward pressure on wages and conflict in aggregate negotiations to guarantee victory at the next elections -the key to maintaining their aggregate power and financial public support.

In fact, we think that these two unions followed a different strategy during the 80's. The first, CCOO, due perhaps to its, *a priori*, strong firm level position (especially in large firms), put stronger pressure than UGT in firm level bargaining. The second, UGT, tried to gain representativeness focusing its negotiating effort mainly at the industry level, the key to winning in small firm workers council elections, much easier to conquer than in large firms. Additionally, we must take into account that UGT is a socialist trade union, closely related in those years to the Spanish socialist party, PSOE, that won the 1982 General Election. Doubtless this fact contributes in explaining, at least partially, the change in union power observed in 1982.

As it is shown in Table 2.6, both unions have gained power at the firm and region/industry levels, but UGT's gain is larger in both cases (2 basis points at firm level and 4 basis points at industry level). In nationwide/industry agreements UGT's power has also risen (about 5 percentage points), and CCOO is rather stable or, in any case, lower. There seems to be one clear winner in the 80's: the UGT union.

We also would like to point out that the union power cannot be measured as in other countries. Whereas in countries like the UK and the US, union's strength is strongly based in its rank and file (i.e. number of workers affiliated to the union), in Spain it is gained by winning elections to the

firms workers' council. In fact, union membership fell from 25% of the labour force in 1980 to a mere 10% in 1990²⁹, but neither figure suggests that unions lost a share of its power in the period (see, for instance the coverage figure in Table 2.7). On the other hand, it is not possible to distinguish between unionized and non unionized sectors (i.e. a standard union mark-up is not identifiable).

Table 2.7.a shows an approximate coverage ratio³⁰ by dividing the number of workers covered by the number of employees (wage earners). It also presents the evolution of the number of agreements and the distribution of the workers covered in each of the three levels considered (national/industry, region or province/industry and firm levels)³¹. As it can be observed there is a high level of coverage throughout the period -around 80 per cent (a bit lower if we take into account the possible multiple accounting). Also it can be noted that the small changes in coverage are mainly due to changes in employment. We think that when the decision to bargain is taken, it does not change despite bankruptcy or changes in the level of bargaining (for instance, changes in bargaining level from plant to firm or multi-firm). On the other hand, it seems clear that the most important bargaining level, in terms of incidence, is the region or province by industry which covers over a half of all the employees covered by any agreement. The national/industry negotiation level covers about 25 per cent

²⁹The Spanish union membership figure is one of the lowest in the OECD countries. The average trade union membership in the OECD fell in that period by a 6.4% (source: OECD).

³⁰We say approximate because some workers are in more than one collective agreement. So, the real coverage figures may be lower.

³¹We report only the 1983-1990 period, because we have no confidence in the figures of previous years.

of the workers covered by any agreement and firm's bargaining level covers about 15 per cent in the worse case (20 per cent in the best one).

Another important topic to determine which negotiation level goes first is the mean delay³² in bargaining (see Table 2.7.b). The simple mean does not reflect a clear pattern. In fact, the mean delay in firm-based agreements (4.8 months) is a bit lower than in industry-based agreements (5.0 months). But when we look the weighted wage increase mean, the mean delay in industry agreements falls to 4.4 months and the firm's weighted wage increase mean does not change significantly. Consequently, industry level bargaining in large units frequently goes first. Hence, this kind of negotiation acts as a leader and firm level bargaining as a follower.

b. Evidence about wages increases.

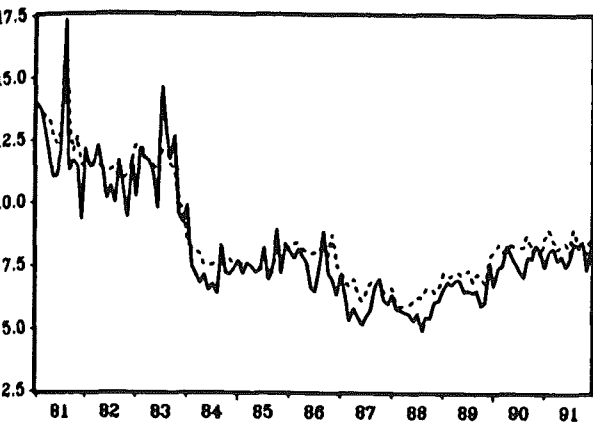
In Figure 2.1, we consider four plots of wage increase in the 80's for firm and industry level agreements. Note first, that both firm and industry level agreements follow a very close path over the 80's, related to expected inflation. However, when we weight by employees involved, firm level agreements are sensibly lower than industry level agreements. Perhaps, this fact is due to different sector structure in both samples but, it certainly offers support to the hypothesis that the strong wage pressure is coming from industry level bargaining.

³²Delay defined as the period from the start of the year to the date of agreement.

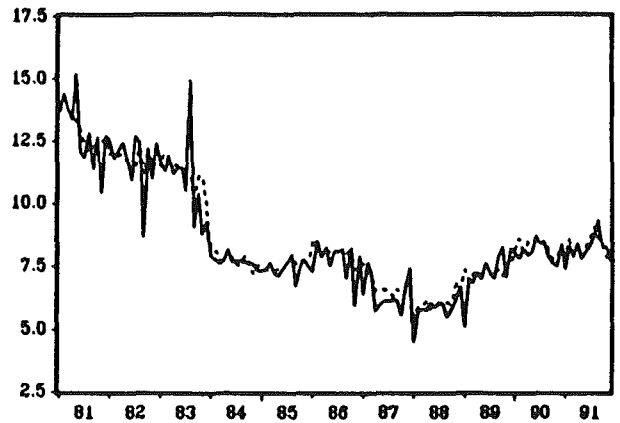
Figure 2.1. Monthly wage means agreements paths. Spain. 1981-1991.

A. MONTHLY MEANS.

FIRM-BASED LEVEL



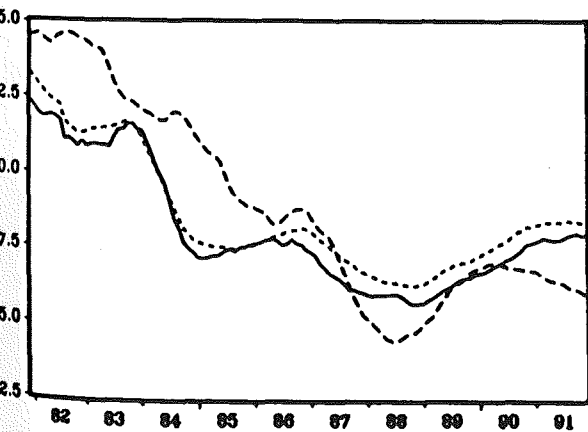
INDUSTRY-BASED LEVEL



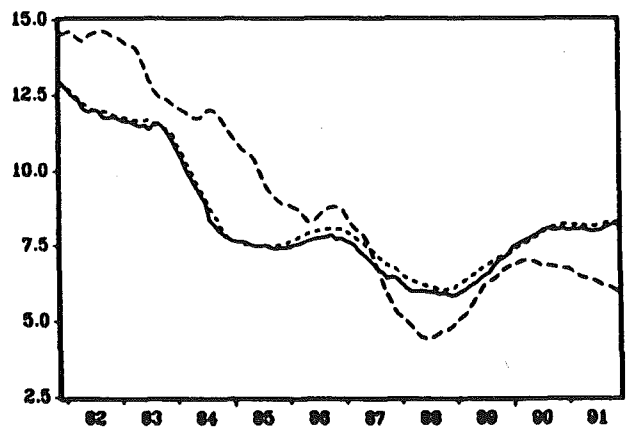
— WEIGHTED - - - - NON-WEIGHTED BY EMPLOYMENT

B. MOVING AVERAGES.

FIRM-BASED LEVEL



INDUSTRY-BASED LEVEL



— WEIGHTED - - - - NON-WEIGHTED - . - . - CONSUMER PRICE INDEX

We distinguish two periods, 1980-1986 and 1987-1990, in the wage increase path. In the first, 1980-1986, an epoch of national agreements and unions worried about employment levels and the general improvement of the economy, wage increases are, in general, lower, than inflation, especially along 1984 when wage increases were cut over four points in only a few months. Doubtless, this effort contributed much to the inflation cut in Spain over this period. In the second, the recovery years, the main unions have prioritized real wage gains, so wage increases have started to raise up to inflation and, consequently, putting inflation tension on the economy.

There are likely to be many reasons contributing to explain this change but we think that it is better to consider that unions have been recovering their traditional fighting objectives, i.e. wages and working conditions. Also we can argue that if the main unions, say CCOO and UGT, had not reverted to traditional objectives there would had been an increasing chance for a new nationwide union since the key to determining the unions' relative power is the election to the workers council. Possibly, the representativeness system is, in a sense, perverse. Due to the pressure on main unions at firm level, they have to demonstrate their combativeness in order to be chosen in every election (one each four years).

Most people who have studied this problem have pointed out that considering gross wages we can also observe strong wage pressure in the period of national agreement (1980-1986). While there is a negative gap between wage increases and end of the year inflation (see Table 2.8, columns A-C), there is a positive gap when we consider (ex-post) gross wage changes and end of the year inflation (Table 2.8, columns B-C). Then, in a sense, the above point of view is correct. However, other important facts must be

considered. For instance, the change in the employment level over the period considered. Think about the bad times (recession); if all the firms first dismiss the less skilled workers, obviously the average wage, all other things being equal, will rise in the first years of recession if there is some wage rigidity. And now, think about the good times (recovery). New hired workers are normally less skilled than current workers and, therefore, they are lower paid. Consequently, this will lower the average wage in the first years of any recovery. This was possibly the Spanish case.

Another possibility to explain stronger wage pressure is through change in regular working hours. As it can be seen in Table 2.9 there was a strong cut in hours during the last decade, although most of this is due to the forty hours regulation introduced in 1983. Between 1981 and 1990 (1984-1990 in brackets) there was a 9.24 (3.22) per cent cut in hours in national level agreements, a 6.51 (0.63) per cent cut in hours in industry/region and 6.54 (1.95) per cent cut in firm level agreements. Using the information on hour cuts and wage increases we can construct an approximate series of hourly wage increases for each one of the three bargaining levels considered.

Only in the years when large changes in hours occurred, 1982-1984, was there a relatively high difference between wage increases and hourly wages. Before considering hours, we were saying that workers were making an strong effort, accepting a real wage increase cut of 1.2 per cent on average. After considering hours, real wage increase rose 1.0 per cent on average. Hence, in the 1982-1984 period the pressure over labour cost is slightly stronger than simple wage increase figures indicate.

As far as wage increase setting it is done at several bargaining levels (see Table 2.4 and 2.5), it would be useful to obtain a measure of

coordination amongst these levels. Using information about the variance across industries at firm and upper-firm bargaining levels and also the variance of its difference, we can infer an approximate measure of coordination in negotiations among firm and upper-firm level agreements (see Table 2.10 for a detailed explanation). Note that the level of coordination is, in general, low (1.0 means no coordination). If we look first at inter-industry differences, very low coordination (higher than 1.0 means discoordination) can be observed in 1981, 1982, 1984 and 1987 (certainly a key year); low coordination in 1985, 1986 and 1990; and a medium level of coordination in 1983, 1988 and 1989. On the other hand, looking at regional coordination (see also Table 2.10) between negotiation levels, the observed pattern is not as clear as those above, but we would like to point out also that 1984, 1985, 1988 and 1989 are years with high level of coordination between firm and industry level agreements. It seems that inter-industry differentials between both levels of negotiation considered are more important than regional differentials. Consequently, we must conclude that industry factors are much more important than regional factors during bargaining.

A very important (endogenous) determinant of wage settlements is the presence of an indexation clause (COLA), which ties workers wage increases to some indicator of prices, such as the consumer price index (CPI). Under some circumstances (the workers more risk averse than the firm) both agents benefit from the clause. Naturally, the employees ought to be willing to accept a lower expected real salary in order to enjoy inflation protection.

Table 2.11 summarizes the wage settlements distinguishing contracts with and without an indexation clause for the upper-firm level (Table

2.11.a) and for the firm level agreements (Table 2.11.b). The percentage of indexed contracts for industry level agreements (firm level) ranges from a low of 29.5 percent (26.7 percent) in 1984 to a high of 58.5 percent (53.3 percent) in 1990. It is important to note that the mean of the employment is much higher for indexed than for non-indexed contract. Thus, the probability of having an indexation clause seems to be strongly related to the size of the bargaining unit.

As expected, the ex-ante wage increase is, at sample means, lower for indexed contracts at both bargaining levels. Note that the difference is much higher in 1987-1991 than in 1984-1986. However, ex-post wage increases for indexed contracts are in most of the years higher than wage increases for non-indexed contracts. This is a direct consequence of the permanent deviation of inflation (December to December) with respect to the government target, and/or expected inflation in May (see Table 2.12). Note that after a couple of years, 1988 and 1989, of high deviation of the inflation to the target the difference between wage increases with and without revision clause gets wider. This seems to be a direct consequence of the fact that increases in uncertainty about future inflation imply an increase in the price workers ought to pay for getting the escalator contract.

c. Evidence about work stoppages activity.

Are work stoppage figures relatively high in Spain?. The first answer should be affirmative. Any international comparison (see Table 2.13) is clear in this respect, despite the differences in accounting rules between ours and other countries. Over the years 1980-1985 the conflict activity in Spain

was 2.1 times higher (4 times higher in 1986-1989) than in Britain, 4.2 times than in the U.S., 7.1 times than in France, 13.4 times than in Germany (200 times higher in 80-83) and 47 times than in Japan. Only Italy suffered a similar conflicting activity level. In fact, the level was a bit higher there during those years. What are the main reasons for such a difference?. Could the bargaining system (strongly mixed in Spain) or the immaturity of the work relations system explain it?. We think the latter is probably the most adequate answer (although also the first reason also has some bearing on the explanation). The right to strike is used in a wide range of situations which should be solved using some other alternative mechanisms.

Once we have established that the incidence of work stoppages in Spain is not much higher than in the U.K or Italy (countries with relatively high incidence level), we will focus on the main explanations for such strike levels. We will consider three different explanations. The first is related to the way that work stoppages are recorded. The second is related to the bargaining system. And the third to the strike regulation.

The recording problem affects industry level strike statistics, basically over-estimating the strike incidence because of the accounting rule, which is different for firm strikes and for industry strikes. Table 2.14 presents a brief description of the accounting rule. We think that this problem must be taken into account every time we look at the official statistics and its solution is only a matter of time.

The second explanation for high incidence comes from the bargaining structure and the negotiation frequency. On the one hand, the bargaining structure increases the incidence for several reasons. Firstly, as far as there is, simultaneously, both industry -or even more aggregated- and firm

level negotiation, some of them will overlap. Consequently, strike activity is increased by means of a relatively high number of bargaining pairs. And secondly, strike incidence, in terms of working days lost, is, all other things being equal, higher at industry bargaining³³. On the other hand, bargaining takes place almost yearly, so negotiation frequency is higher than in other countries where contracts are negotiated every two or three years.

The third explanation comes from strike regulation. As we have already mentioned the strike regulation was very ambiguous during the 80's. It was very easy to call for a strike in a broad range of situations. For instance, in the second half of the eighties (1986-1990), contract strikes, the most important motivation, represented only the 36.2 per cent of all the strikes and 51.7 per cent of all the workers involved in disputes. Ex-ante or ex-post disagreement represented about the 22.4 per cent of the strikes and 20.8 per cent of the workers. Work stoppages over working conditions were less common because they were normally included in collective bargaining. Modernization and work regularization represented about 15.0 per cent of strikes but only 6.0 per cent of the workers are involved in them. And, finally, other causes (including solidarity and economic policy fighting) explained 22.8 per cent of all the strikes and involved 12.5 per cent of all the workers.

Despite the relatively high conflicting activity level in Spain, the annual incidence of contract strikes (see Table 2.15) is bounded by a low of

³³Cheung and Davidson (1990) present an interesting theoretical model to justify this assertion.

8% in 1986 and a high of 16% in 1987³⁴, with a mean of around 10%. Given the fact that we are analyzing annual data and contracts can last for more than one year, contract strike incidence could be much higher. The mean duration of contracts in Spain is close to 2 years. Therefore, contract strikes incidence during 1985-1990 could be close to 20%. Unfortunately, we cannot say too much about previous years contract strikes incidence, because of the lack of adequate data³⁵. However, given the facts that strike activity is procyclical³⁶, and that the period we are looking at corresponds to years of expansion for the Spanish economy (the sharpest since late 60's), we can conclude that the figures pointed above (10-15% for yearly data, 20% for contract data) must not be far away from an upper bound for striking activity in Spain. Moreover, these figures are not far away from the US and Canadian contract strikes incidence. For the US the figures are 13.3% in 1970-1980 and 9% in 1981-1990³⁷. For Canada, the figure is 22% in 1964-1995 with 15.7% in the nested subperiod 1971-83³⁸.

The mean duration of strikes varies from a lowest of 3 days to a

³⁴We must be cautious because the frequency of our data (yearly) does not correspond exactly with contract data (they can last in some case for more than a year). In any case, we must point out that the usual way of driving wage bargaining in Spain is yearly, despite a multiyear contract which normally covers more general working conditions.

³⁵Although statistics has been published since 1978 they do not permit the identification of contract strikes. Assuming that the proportion of contract strikes was the same in 1982-85 than in 1986-1990, the incidence of contract strikes in the former period would be 13.6%.

³⁶See Kennan (1985) for an argument in favour of this fact. However, Harrison and Stewart (1990) concluded: "the procyclical frequency previously identified derives from non-contract strikes, and that contract strikes over wage issues alone show no evidence of procyclical frequency". Hence, procyclical contract strike activity should be taken with caution.

³⁷See Gramm (1985) for a description of the first and Cramton and Tracy (1992) of the second.

³⁸See Card (1990) for a description.

highest of 10 days. Moreover, from the official statistics³⁹ 23% of the strikes last just one day (mode), with a median of 3 days and a mean around 5 days. Notice that statistics are much lower than those in the US (where the median for a sample of 5002 contracts in the 1970-89 period is 27 days) and Canada (with a mean for a sample of contracts in the period 1964-1985 of 38 days). In summary, strike incidence is more or less the same (a little higher if we consider contract incidence) as in the US and Canada but strike duration is comparatively shorter. Such a difference in duration may be explained by the effect of industry bargaining. In fact, the dual structure of bargaining in Spain, industry and firm level altogether, allows workers in a firm to have much better knowledge of what is going on in their own industry and also in the whole economy.

Doubtless, combining a little strict strike regulation and some mechanisms to avoid (or solve) ex-ante (negatives to bargaining) and ex-post (agreement breaches) and other causes, strike incidence could be much lower, not reaching the German or French level but perhaps getting close to the U.K. level. Also, we think that the main agents (firm and worker representatives) implicated in conflicts are still learning; firms, how to avoid or minimize the strike incidence and unions how to use accurately the right to strike.

³⁹Estadística de Huelgas y Cierres Patronales. Spanish Ministry of Labor and Social Security.

IV. Wages, wage increases and contract strikes: Evidence from the NCGE.

The "Negociación Colectiva en las Grandes Empresas en..." (NCGE) inquiry carried out by the Spanish Ministry of Economy provides yearly information about bargaining over wages and some other working conditions. This survey contains, for each year, information about negotiations in about 600 firms and 700 bargaining units (between 200 and 300 for the initial years), though they are not always the same firms. It has been made since 1978 and includes a broad information set about bargaining and firms (more than 300 variables for each firm)

Table 2.16 summarizes some of the most important results of the bargaining process from this survey. Note that this source has information on the initial positions of bargaining as well as wage increases and wage bill per employee. Also, it has information about the negotiation length and the strike activity (lost hours per worker), as well as information about workers council structure, rather different than the structure reported in Table 2.6, where UGT had the majority since the elections in 1986. This fact could imply that workers councils in large firms (dominated by the CCOO union) may follow a different bargaining strategy from worker representative in industry level negotiations, dominated by the UGT union.

Currently, this is the only Spanish source which allows us to relate wage bargaining and contract strike activity (although strikes are measured in hours) and the following analysis will be devoted to the study of such relationship emphasizing the evidence in favour of the most important theoretical insights.

a. Contract strike incidence and duration in the 1985-1990 period.

Our data set allows us to build up to three distinct measures of conflicting activity: the length of the negotiation period (in days), the delay or holdout⁴⁰ (in days) in reaching an agreement and the duration of the strike (in hours). Table 2.17 shows the incidence and the length of those threats for the sample period. Notice first that the length of negotiation substantially increases from 1985-1987 to 1988-1990, mainly by the absence of any aggregate agreement in the last period, which in the previous acted as a reference basis. In a sense, this is evidence of how much the aggregate setting matters at the firm level setting. Notice also that the holdout incidence is never less than 70%, with a maximum of 98% in 1987, precisely the first year without any nationwide agreement. Conditioning on holdout threat does not increase the spell of negotiation. On the contrary, in most of the cases it lowers since, under this circumstance, bargaining starts later.

As expected, conditioning the sample on a holdout increases strike incidence for all the years (1985 being an exception). This can be seen as an evidence of the fact that the union starts threatening with delay. Later, either it strikes or sets an agreement. Conditioning the sample on observing a strike, the mean spell of negotiation increases by more than a 20%. On the other hand, seasonal effects are important in our sample (see Table 2.18). A strike is more likely to occur if negotiations last until the Spring or Summer. The seasonal structure of strike incidence in Spain is different

⁴⁰Number of days from the starting of the year to the date of settlement.

from that in the US. For example, in a sample of US contracts used by Vroman (1989), which covers a time span of 27 years, the top striking activity terms are Autumn and Winter, whereas in Spain we observe just the opposite, i.e. the top striking terms are Spring and Summer.

Previous empirical work did not consider in many cases strike persistence (or, in other words, conditional strike probabilities) in depth, perhaps due to a lack of adequate information. Our data set allows us, given the fact we know at least two strike outcomes for each observation, to obtain an evaluation of the probability of observing a strike in the current year given that there has been a strike in the previous years (see Table 2.19). On the one hand, conditioning to a strike in the previous year, boosts the sampling strike probability up to 30% in most of the sampling period. Conditioning to a strike in the two previous year does not alter the above pattern. On the other hand, conditioning to non-strike in any of the three previous years lowers the probability of striking in the current year but the change is not as high as pointed above. Hence, there is an asymmetry in behaviour.

Table 2.20 shows the features of the sample data by industry (one digit Spanish' SIC classification) and also for broad economic sectors (manufacturing and services). There is no major difference in holdout incidence dispersion across industries. On the contrary, there are large differences in strike incidence across industries and sectors. With respect to strike activity we find, on the one hand, that the level of striking for the manufacturing sector is much higher than for the service sector in both incidence (16.4% and 10.0%, respectively) and duration (34.7 hours and 27.7 hours, respectively). The finding is robust for a year by year comparison

(see Table 2.21). On the other hand, the top striking industries in terms of incidence, are the durable goods industry (22.6%) and the transport industry (22.4%), which is not surprising because of the union's strength in both sectors. In this respect, the structure is similar to what has been observed for other countries⁴¹.

Summarizing the findings, strike probability is positively correlated with the length of negotiation, and related to the calendar (to both, annual and monthly). Strikers now are more likely to be strikers in the near future. Strike incidence is not homogeneous by either sector or industry. Finally, work stoppage duration is consistently short across either sector or industries (but never longer than 5 days).

b. Claim, offer and agreement.

The main difference of our data set with respect to others lays in the fact that we know, for a large share of the agreements, the union's first wage increase claim (CLAIM) and firm's first wage increase offer (OFFER). This knowledge imposes a strong restriction on the kind of theoretical model we are able to apply. For instance, having at least an offer from each agent we may reject both a screening model in which the union makes all the offers (Hayes (1984) and Card (1990)) and an alternating offers model with a fixed interval between the offers (Grossman and Perry (1986) and Kennan and Wilson (1989)). We think that, if any, a signalling model with multiple threats is adequate to represent the underlining negotiation structure of our data (see

⁴¹See McConnell (1989) and Cramton and Tracy (1992) for the US, and Herrington (1988) and Card (1990) for Canada.

Admati and Perry (1987), or recently, Cramton and Tracy (1992)). We will return to this key point later on in the next section. Let us first analyze the evidence across tables 2.22 and 2.23.

Having information about the initial position of both, union and firm, allows us to identify, to a certain extent at least, four distinct wage increase types of outcome. The most common outcome (column 4 of Table 2.22), which implies an unknown sequence of alternative offers after a union initial claim and a firm initial offer (that is, at least, three offers are necessary for reaching an agreement), represents the 85% of all the valid outcomes. It has a strike incidence of 16% and a negotiation length slightly above three months (96 days). The other three types of outcomes (column 1 to 3 of Table 2.22) are related to either of both initial claim and/or initial offer. It can be shown that both strike incidence and length of negotiation are lower than in regular disagreement outcomes. The lowest strike incidence and length of negotiation is achieved, as expected, when firm accepts union's initial claim (column 1). Notice that in this case, firm's acceptance is not immediate in most of the cases, given the fact that the mean spell of negotiations is close to a couple of months. Notice also the relative high strike incidence when union gets its initial claim but after being initially rejected, which implies a flat union's wage concession curve with respect to the length of negotiation.

Table 2.23 provides information about how initial positions are generated and when initial positions are revealing some firm or union information. With respect to firm offers, notice first that, in a very high and year by year regular proportion, they are over the association of firms aggregate positioning which can be seen as a minimum credible point (MCP,

which normally is related to government signalling, i.e. inflation target). Workers assume they get the MCP for sure, so any initial firm offer must be (to be credible) over the MCP. Secondly, the mode of initial claim coincides, in many of the years considered, with the MCP. Hence, the mode is the least informative about the demand state of the firm. Following this reasoning, an initial firm offer under the MCP might be viewed as an attempt to signal to the union a bad state (if firm were not trying to reveal any information it would offer the union the MCP). On the contrary, an initial offer above the MCP is a signal of a firm good state or, at least, a signal of firm's willingness to concede.

c. Evidence on the correlation among wage outcomes and length of negotiation, delay, strike incidence and duration.

A key prediction in most of the theoretical background, from the earlier Ashenfelter and Johnson (1969) model to many recent one-sided asymmetric information models, is that negotiated wage increases and time-related threats are correlated. In particular, almost all the empirical studies emphasize a theoretical negative correlation between wage outcome and strike duration. Recently, and following the formulation of Admati and Perry (1987), a negative correlation with respect to the length of negotiation has also been stressed, particularly when taking the holdout form. From our point of view, two additional facts have been underrepresented. Firstly, there is no theoretical role for the decision to strike and secondly, the fact that strike duration is a random variable is not taken into account. Throughout tables 2.24 to 2.26 we examine the

sampling evidence on the incidence of threat decisions in wage outcomes (Table 2.24), the evidence about the relationship between the spell of a given threat and wage outcomes (Table 2.25) and, finally, the incidence of the profits level (Table 2.26).

Concerning the positioning of wage agreements with respect to threats incidence (Table 2.24) notice that, on the one hand, there is no major difference in what can be seen conditional to the delay threat to unconditional positioning. On the other hand, conditioning to a strike has several implications. First, the initial disagreement (measured as the initial claim less the initial offer) is broader. This spread is the consequence of higher initial union claims and also lower initial firm offers. Reversing the argument, it follows that **the higher the initial disagreement, the more likely a strike becomes**. Second, the mean of the agreements is not lower than in the reference case (in fact, it is a little higher in most of the years), so we are in front of a "mean preserving spreading" of the outcomes. Consequently, sample mean statistics do not throw any light on the sign of the expected relationship between strike activity and wage outcomes. Third, as far as the initial disagreement is broader, the concession curves with respect to initial positions are sharper for both agents. Fourth, heterogeneity is important in our data set. For example, notice that the conditional mean wage increase is higher than the unconditional for medium sized bargaining units (less than one thousand workers) but lower for large bargaining units (more than one thousand workers). This must be taken as a warning about generalizing sampling statistics.

In Table 2.25 we examine the relationship between wage outcomes and

strike duration, spell of negotiations and delay, respectively. With respect to the first, strike duration, **there is not much evidence of a negative relationship**. On the contrary, there is some evidence supporting a positive association, given the fact that longer strikes are associated with higher wage outcomes in most of the years. The finding is robust to control wage outcomes by time and industry dummies (although the results are not reported). Our guess is that this pattern is the consequence of the different bargaining structure that exists in Spain (industry and also firm level bargaining). With respect to the two other variables considered, there is some evidence to support a negative correlation between wage increases and length of negotiation and also with respect to delay. In both cases and for all the years analyzed, the mean wage increases of the upper quartile is lower than the overall mean, from a minimum of 1% to a maximum of 7%.

Finally, in Table 2.26 we discriminate the sample between strike and non-strike observed and profits and non-profits made at current year. The first impression one could get from this table is that the firm's profitability level is a key circumstance in determining the wage outcome. Strikes serve only as a mechanism for the enforcement of an agreement in the case of a huge initial disagreement.

V. Final comments.

Throughout this chapter, we have analyzed the collective bargaining system and results. The analysis is centered in the eighties. Let us start with some keywords for this period: Democracy, Crisis, Recession. Democracy generated many changes in Spain in a very short period. The 70's crisis and the subsequent recession did not help very much in smoothing the transition period. The result is a very complex working relations system. Strikes and negotiation are left very free. The regulation is very permissive and induces confusion and misuse. Confusion in negotiation because there are a lot of agreements, sometimes very close together. Misuse in industrial action because there exist other possibilities to solve some conflicts. Therefore, the eighties could be considered with respect to both bargaining and work stoppages as a time of learning, and this was a very difficult task, especially during the first half of the eighties, when the recession was striking the economy.

Although in that period there were frequently general agreements, their design was too rigid; and in most of the industries, there was multiplicity of agreements. In such conditions, small firms sometimes found it very difficult to choose which agreement to follow (we think this decision is a kind of bargaining in itself) and normally it was not flexible enough to allow for the adaptation of firms to very changeable conditions.

There are two important levels of bargaining: Industry-based and firm-based bargaining. In both levels there are only two important unions (although others exist locally), especially in industry-based negotiations because of the representativeness criterion. Nevertheless, it seems that

coordination between both levels of bargaining is not very high. We think that a wrong design of agreements at the industry-based level could be the main explanation of this fact, because this level is the most important negotiation level and normally goes first. There are a lot of agreements (around 4000 each year), and, consequently, each bargaining pair has, at any time, information (as there are very few important unions, communication is very easy) about what the other pairs are doing and can use it to drive its own negotiation. What kind of factors are more important?. The evidence supports the idea that industry factors are more important than regional, although a formal model is required to assess this.

The available data will permit us to analyze several bargaining issues, which will be developed throughout the following chapters. In chapter 4 the relationship among wage settlements and indexation clauses it will be analyzed using firm level data from the ECC. As far as this data set includes information about ex-ante and ex-post wage settlements we have the possibility to control for several of the provisions of the COLA clause.

As we have mentioned, apart from the official statistics there is a special survey in Spain, the NCGE, devoted to bargaining and other firm issues. Using data from this survey we will analyze wage setting from two extremely different approaches. On the one hand, a standard wage equation will be considered in chapter 3, devoting special attention to testing the relevant bargaining structure. On the other, we will analyze in chapter 5 the relationship between wage increases and strike outcomes, paying special attention to the detection of the wage decline with respect to strike duration (which apparently is not present in sample data) and the analysis of strike decision initial bargaining position setting.

Table 2.1. A History of Conflict Activity in Spain. 1970-1990.

| Year | agree Year | % coveraget | arbitra tion | workers involved \forall | disputes‡ | workers involved \forall | days lost \forall |
|------|---------------|----------------|-----------------|-------------------------------|-----------|-------------------------------|------------------------|
| 1970 | 1673 | 41.79 | 156 | 3.5 | 817 | 3.66 | 6.75 |
| 1971 | 1184 | 22.74 | 135 | 1.6 | 601 | 2.66 | 8.18 |
| 1972 | 1560 | 34.84 | 205 | 4.8 | 608 | 3.05 | 7.46 |
| 1973 | 1422 | 27.80 | 149 | 3.3 | 811 | 4.41 | 11.20 |
| 1974 | 1634 | 32.25 | 122 | 7.9 | 1193 | 6.26 | 11.08 |
| 1975 | 1027 | 18.19 | 189 | 9.1 | 855 | 5.56 | 10.35 |
| 1976 | 1572 | 38.30 | 306 | 14.7 | 1568 | 36.39 | 110.0 |
| 1977 | 1143 | 28.76 | 206 | 6.0 | 994 | 23.17 | 92.57 |
| 1978 | 1756 | 46.29 | 82 | 3.7 | 1356 | 36.33 | 128.7 |
| 1979 | 1997 | 49.60 | 125 | 9.0 | 1789 | 57.52 | 171.1 |
| 1980 | 2436 | 67.00 | 125 | 6.0 | 1365 | 11.70 | 61.77 |
| 1981 | 2637 | 44.35 | 65 | 7.0 | 1307 | 11.26 | 51.53 |
| 1982 | 3385 | 62.63 | n.a. | n.a. | 1225 | 8.75 | 27.87 |
| 1983 | 3655 | 62.26 | n.a. | n.a. | 1451 | 14.83 | 44.16 |
| 1984 | 3796 | 61.82 | n.a. | n.a. | 1498 | 22.42 | 63.57 |
| 1985 | 3834 | 61.31 | n.a. | n.a. | 1092 | 15.11 | 32.23 |
| 1986 | 3790 | 62.75 | n.a. | n.a. | 914 | 8.57 | 22.79 |
| 1987 | 4112 | 68.67 | n.a. | n.a. | 1497 | 18.81 | 50.25 |
| 1988 | 4096 | 68.75 | n.a. | n.a. | 1193 | 66.92 | 116.4 |
| 1989 | 4302 | 67.77 | n.a. | n.a. | 1192 | 18.94 | 68.43 |
| 1990 | 4498 | 74.26 | n.a. | n.a. | 1047 | 13.82 | 36.85 |

†: Considering Total employment.

‡: Disputes from 1970 to 1979; Strikes since 1980.

\forall : Number in 10^5 .

SOURCES: Fina and Hawkesworth (1984)

Boletín de Estadísticas Laborales. MEH. Various issues.

Table 2.2. Some Spanish' macroeconomic Indicators. 1970-1990.

| Year | GNP | INF | U | EMP | ULC | CPI | $\Delta W(\text{ECC})$ | $\Delta W(\text{ES})$ | $\Delta W(\text{NCGE})$ |
|------|------|------|------|------|-------|------|------------------------|-----------------------|-------------------------|
| 1970 | 4.1 | 6.8 | 1.1 | 12.3 | -- | -- | -- | -- | -- |
| 1971 | 4.9 | 8.0 | 1.5 | 12.5 | -- | -- | -- | -- | -- |
| 1972 | 8.1 | 8.7 | 2.1 | 12.8 | -- | -- | -- | -- | -- |
| 1973 | 7.8 | 11.8 | 2.3 | 13.1 | -- | -- | -- | -- | -- |
| 1974 | 5.7 | 16.6 | 2.6 | 13.1 | -- | 15.7 | -- | 15.6 | -- |
| 1975 | 1.1 | 16.7 | 3.8 | 12.8 | -- | 16.9 | -- | 21.4 | -- |
| 1976 | 3.0 | 16.7 | 4.9 | 12.6 | -- | 14.9 | -- | 19.3 | -- |
| 1977 | 3.3 | 22.8 | 5.7 | 12.4 | -- | 24.5 | -- | 25.0 | -- |
| 1978 | 1.9 | 20.2 | 7.5 | 12.1 | -- | 19.8 | -- | 20.5 | 21.1 |
| 1979 | 0.4 | 16.7 | 9.2 | 11.9 | -- | 15.7 | -- | 14.1 | 13.4 |
| 1980 | 1.2 | 14.1 | 11.2 | 11.4 | -- | 15.5 | -- | 15.3 | 15.6 |
| 1981 | -0.2 | 11.2 | 14.4 | 11.2 | 72.6 | 14.6 | 20.3 | 13.1 | 13.9 |
| 1982 | 1.2 | 13.8 | 16.3 | 11.1 | 81.1 | 14.3 | 14.5 | 12.0 | 12.8 |
| 1983 | 1.8 | 11.6 | 17.8 | 11.0 | 89.7 | 12.2 | 13.5 | 11.4 | 12.8 |
| 1984 | 1.8 | 10.9 | 20.6 | 10.7 | 94.4 | 11.3 | 9.3 | 7.8 | 7.9 |
| 1985 | 2.3 | 8.5 | 21.9 | 10.6 | 100.0 | 8.8 | 9.6 | 7.9 | 8.3 |
| 1986 | 3.2 | 11.1 | 21.5 | 10.9 | 107.6 | 8.8 | 11.4 | 8.2 | 8.7 |
| 1987 | 5.6 | 5.9 | 20.6 | 11.4 | 113.4 | 5.2 | 7.1 | 6.5 | 7.0 |
| 1988 | 5.2 | 5.6 | 19.5 | 11.8 | 118.5 | 4.9 | 6.0 | 6.4 | 5.7 |
| 1989 | 4.8 | 6.9 | 17.3 | 12.3 | 123.8 | 6.7 | 5.7 | 7.8 | 6.2 |
| 1990 | 3.7 | 7.3 | 16.3 | 12.6 | 132.2 | 6.7 | 8.5 | 8.4 | 7.5 |

KEYWORDS:

GNP: Gross National Product

INF: GNP deflator

U: Unemployment rate

EMP: Employment level (10^6)

ULC: Unit Labor Cost (1985=100)

CPI: Consumer Prices Index.

 $\Delta W(\text{ECC})$: Wage increases ECC. $\Delta W(\text{ES})$: Wage increases from the "Encuesta de Salarios",
Instituto Nacional de Estadística (INE). $\Delta W(\text{NCGE})$: Wage increases from the NCGE survey.**SOURCE:** Informe Anual. Banco de España. Various Issues.

Boletín de Estadísticas Laborales. MTSS. Various issues.