

DOCUMENTO OCASIONAL

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BARGAINING IN SPAIN:
AN INDIVIDUAL
DATA ANALYSIS**

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Abstract

This paper analyses the effects of the structure of collective bargaining on its main results. To do this it uses the individual information on collective agreements signed in Spain between 1990 and 2001, drawn from the official statistics on collective bargaining agreements compiled by the Spanish Ministry of Labour and Social Security. The empirical analysis conducted shows that the bargaining level has a significant effect both on wage increases and on the distribution of the wage levels established in collective agreements. At an intermediate bargaining level, that is to say at the provincial industry level, larger wage increases are usually seen than those agreed both at the more centralised (i.e. national industry) and more decentralised (company) levels. Furthermore, bargaining at higher than company levels considerably reduces wage differentials between job categories.

1. Introduction

The collective bargaining system is a fundamental mechanism for explaining the workings of the Spanish labour market. Around 90% of private-sector wage-earners in Spain see their wage (and, generally, working) conditions set in collective bargaining between trade union and employers' representatives. This figure is among the highest for European countries and clearly exceeds that for the United States or the United Kingdom, for instance.

However, the analysis of the effects that the collective bargaining system has on the workings of the labour market, and on the Spanish economy in general, is strongly constrained by the databases available. Among the papers that have analysed the Spanish collective bargaining system in recent years, mention may be made of that by Jimeno (1992), which used individual information on collective agreements signed mostly in the eighties in order to analyse the macroeconomic consequences of the collective bargaining system. His conclusions highlighted the existence of an inefficient bargaining mechanism hampering wage moderation. More recently, various papers have analysed the wage structure arising from collective bargaining by constructing specific databases for some periods and industries [see, for example, Lorences *et al* (1995), Abellán *et al* (1997) or Simón (2000)]. Generally, these studies have found bargaining level to have a significant effect on the wage structure established in collective agreements¹.

This paper marks the start of a more extensive research project seeking to conduct an in-depth analysis of the Spanish collective bargaining system. In this initial phase, the aim has been to analyse the main characteristics of the system, identifying those which particularly affect its results. To do this, a database comprised of individual information drawn from the official collective bargaining statistics compiled by the Spanish Ministry of Labour on each of the collective agreements signed in Spain during the nineties² has been used for the first time. This information has been taken from the statistical records that the negotiating parties have to complete after signing each agreement. It enables the influence of a broad set of characteristics of the agreement on its results to be analysed. In particular, this initial phase has focused on analysing how the different characteristics of the agreement bear on the wage increases and wage structure established in collective bargaining. In the following phases of the project, this information will be combined with that from the Banco de España Central Balance Sheet

¹ Mention should be made here also of the studies by the Ministry of Economy and Finance from 1985 to 1995 on collective bargaining in large firms. These studies included a highly detailed descriptive analysis of the characteristics of collective bargaining based on a survey conducted among firms of more than 200 employees.

² This database is described in Appendix 1.

Data Office, which will allow more detailed analysis of how the collective bargaining system affects the workings of companies.

The rest of the paper is organised as follows. Section 2 briefly summarises the legal framework in which collective bargaining is undertaken. Section 3 offers a descriptive analysis of the main features of the Spanish collective bargaining system, highlighting how it is divided into bargaining levels. In section 4 a multivariate analysis is performed to identify the effect of the main characteristics of bargaining on wage increases. Rounding off the empirical content of the paper, Section 5 analyses the impact of bargaining level on the wage differentials arising from collective bargaining. Finally, Section 6 offers a summary and draws some brief conclusions.

2. Institutional framework

Before analysing the characteristics of the Spanish collective bargaining system, we briefly describe its institutional framework. At present, the Spanish collective bargaining system is underpinned by principles stemming from the 1980 *Estatuto de los Trabajadores* (Workers' Statute) and from the successive amendments thereto in the 1990s. The basic principles of this system are: legitimacy to participate in bargaining, statutory extension (automatic general applicability) of any collective agreement at higher than company level and *ultraactividad* (literally “ultra-activity”) of collective agreements.

First, trade unions' legitimacy to bargain does not come from the number of affiliated workers. Rather, trade union representation in bargaining arises from electoral strength, i.e. from the votes obtained in trade union elections. The results of these elections bestow representativeness on those unions that obtain more than a certain percentage of votes, allowing them to be party to the various negotiating processes. Second, the principle of statutory extension establishes that any collective agreement at higher than company level must be applied to all companies and to all workers forming part of the geographical and industry level in question, even though they may not have participated in the bargaining process. Moreover, the regulatory mechanism in place to resolve conflicts between collective agreements concluded at different levels (*conurrencia*) notably limits the likelihood that lower-level collective agreements may change aspects already included in higher-level agreements. Finally, the “ultra-activity” of an agreement refers to a principle whereby it remains valid after its expiry, if it has not been renewed³.

³ For a more detailed analysis of the legal aspects of the collective bargaining system, see García-Perea *et al* (1999).

These characteristics together interact to form a collective bargaining system notable for the high coverage of wage earners (practically total, despite the low proportion of union membership) and the predominance of agreements at higher than company level, negotiated mainly by the majority unions and employers' associations. Groups such as temporary workers (with low participation in union elections) and small and medium enterprises are scantily represented.

This system has been scantily affected by the two reforms carried out in the 1990s. The reform of Workers' Statute by the government in 1994 sought to broaden the content of collective bargaining, repealed the "*Ordenanzas Laborales*" (*Old Labour laws*) and attempted to encourage greater decentralisation of negotiation. To this end, the conditions relating to conflicts between collective agreements negotiated at different levels was changed, albeit only slightly⁴ and it was made compulsory to include get-out clauses affording companies that find themselves in economic difficulties total or partial release from the obligation to comply with the pay terms specified in the collective agreement. In 1997, the social actors⁵ signed the *Acuerdo Interconfederal sobre Negociación Colectiva* (Intersectoral Agreement on Collective Bargaining) which advocated increasing the level of co-ordination of the collective bargaining mechanism. In so doing, they gave priority to country-wide industry agreements recommending the inclusion of a wider range of matters in the bargaining at this level. The signatories declined to give this agreement the status of law, leaving the social actors involved at each bargaining level free to decide whether to apply the proposed changes. The progress made in applying them has not been notable. However, the empirical analysis made in the following sections examines the possible effects of these reforms.

3. Basic characteristics of collective bargaining in Spain

3.1. Level of collective bargaining

One of the basic features of the Spanish collective bargaining system is that it is divided into various bargaining levels. Given the way in which collective bargaining is organised in Spain, the collective agreements can be negotiated between the representatives of workers and employers either at the decentralised company level or at the more centralised industry level at its different geographical levels: local, provincial, regional or national. Table 1 shows that in Spain the negotiation of collective agreements takes place predominantly at the industry and provincial level, which

⁴ The change raised the precedence of lower-level agreements, except those at company level, relative to higher-level agreements.

⁵ CEOE (Confederación Española de Organizaciones Empresariales – Spanish Confederation of Employers' Organisations), CEPYME (Confederación Española de la Pequeña y Mediana Empresa – Spanish Confederation of Small and Medium-Sized Enterprises), UGT (Unión General de Trabajadores – General Workers' Confederation) and CCOO (Comisiones Obreras – Trade Union Confederation of Workers' Commissions).

represents an intermediate degree of centralisation. This is the bargaining level at which the working conditions of more than 50% of the workers covered by collective bargaining are established. As can be seen, this situation has barely changed since 1990 and the percentage of workers whose collective agreement is negotiated at this intermediate level has remained very stable over the last 12 years.

The next most important bargaining level in terms of number of workers is the nation-wide industry level, which covers around 25% of workers, whereas regional (Autonomous Community) industry agreements, whether intra- or inter-regional (i.e. applicable in one or more Autonomous Communities), cover a low percentage of workers, around 8%. In this respect, it should be noted that intra-regional agreements have become increasingly important during the decade. Finally, the working conditions of only 10% to 15% of workers are negotiated at company level, and this percentage has tended to decrease in recent years.

The collective bargaining databases do not have much information on companies' characteristics that would be of use in identifying which of them may be influencing the choice of bargaining level. However, the number of workers covered by each agreement is known and, in the case of agreements at higher than company level, the number of companies covered is also available. This enables the average company size to be calculated, and these figures are included in Table 2 for the three main bargaining levels: company, provincial industry and national industry.

As can be seen, company-level agreements basically affect large firms with an average of nearly 300 workers, while small firms are principally affected by industry agreements, basically of a provincial nature. The latter agreements affect firms with an average size of 15 workers. Finally, national industry agreements seem to be found in larger firms, although smaller than those covered by company-level agreements. On average, they affect firms with a size of 185 workers. In any event, it is noteworthy that since the mid-1990s the size of firms affected by national industry agreements is increasing.

Disaggregated analysis of the bargaining level by industry makes it possible to examine the differences between industries and, furthermore, check whether the stability seen at aggregate level is also found across industries. The database includes each industry with a disaggregation at the two-digit level of the CNAE-93 (*Clasificación Nacional de Actividades Económicas* – Spanish National Classification of Economic Activities). Table 3 shows the distribution of workers covered by collective agreements, arranged by bargaining level and industry, and aggregates this variable at the level of the CNAE-93 section (11 broad industries). The provincial industry level is the majority

bargaining level, but there are significant differences between industries. In industries such as agriculture, construction, trade and hotels&restaurants, it is the majority bargaining level, being much more important than at aggregate level. However, national industry agreements predominate in the financial services industry and have above-average importance in industries such as manufacturing, business services and other services. Finally, company-level bargaining is practically all there is in the energy industry and of great importance in the extractive and transport industries.

Perhaps the most notable feature of this industry distribution is how steady it has been over time. The changes in this distribution between the beginning and the end of the 1990s (see Tables A1 and A2 in Appendix 2) are minimal, i.e. once a certain bargaining level has been decided upon in a certain industry, there are unlikely to be significant changes over time.

In short, collective bargaining takes place mainly at an intermediate level (provincial industry level), where the working conditions of more than half the workers covered by collective bargaining are negotiated. In all, more than 85% of workers are covered by industry agreements at varying geographical levels, which means that less than 15% of workers negotiate their working conditions at company level. This situation has moreover remained unchanged over the last ten years, with perhaps a slight decline in the importance of company-level collective bargaining in Spain. Also, company size exerts a clear influence, since company-level bargaining tends to gain in importance with increasing company size. Disaggregated analysis by industry highlights particularly the fact that the industry distribution of bargaining levels has remained steady over time, with provincial industry agreements prevailing in construction, trade and hotels&restaurants, while company-level agreements predominate in energy and transport.

The following section analyses other characteristics of collective bargaining in Spain. Analysis of how the division into various bargaining levels affects the outcome of collective bargaining is left until Section 4.

3.2. Subject-matter of bargaining

The basic outcome of collective bargaining is determined by the wage increases agreed. However, other matters relating to working conditions are also negotiated. Our database has information on the agreed working hours and on whether the agreement does or does not contain clauses relating to certain labour matters such as employment, hiring, the use of overtime, workers' welfare benefits (such as retirement supplements, pension plans, etc.) and the existence of worker productivity or attendance incentives.

Table 4 shows the percentage of workers covered by each type of clause in their collective agreement, distinguishing whether the negotiation took place at company or a higher level. In general, during the 1990s there was a trend towards the inclusion in collective agreements of a broader range of matters, which has led to a proliferation of clauses of this type. Particularly noteworthy is the growing number of agreements with clauses on the reduction of working hours, on hiring and on employment⁶. There are differences between bargaining levels that are worthy of comment. Generally, in company-level agreements a broader range of matters is negotiated and a higher percentage of workers at this level is covered by the various clauses analysed, except in the cases of reduction of working hours and of minimum wage clauses.

The difference is particularly significant in the latter case since, although around 30% of workers covered by industry agreements have in their agreements a clause establishing a minimum wage, this proportion is around 20% in company-level agreements. As analysed in Section 5, at the industry bargaining level there is a clear tendency for wage differentials to diminish. In this context, the raising of the minimum wage would be one more instrument contributing to its achievement. As mentioned above, in other respects company-level agreements are characterised by a greater abundance of additional clauses of this type. This is particularly so in the case of more specific matters dealing with the workings of the company, such as the existence of restaurant or transport services, but also in other more general matters, such as hiring, vocational training, retirement and other welfare benefits and productivity incentives.

3.3. Time of negotiation and term of agreements

Analysis of the time of year when collective agreements are signed may provide valuable information if the date is found to differ depending on bargaining level and/or industry. The reasoning here is that certain collective agreements may serve as a reference for subsequent negotiation of other agreements. In addition, the inflation expectations taken as the basis for negotiating wage increases for a given year will change during the year and this could give rise to differences in the agreed wage increases depending on the month in which the agreement was signed. This analysis could also provide information on whether the “ultra-activity” of agreements (indefinite prolongation in time until a new agreement is signed) signifies that a new agreement can only entail an improvement on the previous one; the approach here would be to identify the agreements that are signed a long time after the expiry of the immediately preceding one, thereby enabling the analysis of how the period of prolongation of these agreements affects the wage increases (and other matters) finally agreed upon. This latter exercise, however, is left for Section 4 of the paper.

⁶ Appendix 1 explains in more detail the possible content of both types of clause.

The best way of going about the analysis is to observe in which month or months most agreements are signed. First, of the total observations for which the month of signature of the agreement is known⁷, 43% relate to agreements signed around the middle of the year (May to July), with the greatest number being entered into in June (15.3%), as can be seen in Table 5. As regards the trend over time, consistently throughout the period most of the agreements were negotiated around the middle of the year, the percentages ranging from 38.8% in 1997 to 51.3% in 1991.

Moreover, there are no notable differences between bargaining levels (see Table 6). The analysis by industry in Table 7 shows that only the financial services industry departs from the general pattern, since a significant part of its negotiation takes place at the end of the year, so that most agreements are signed in December (14.2% of all those signed in the period 1990-2001), and this trend became more pronounced over the period analysed. In the construction industry the percentage of agreements signed in the middle of the year is much higher than the average (64.6% from May to July), and they are concentrated most strongly in June (27.5%).

There is thus no general pattern in the agreement signature times that would suggest a cascade effect in the collective bargaining system originated by certain initial reference agreements. Nonetheless, the effect of the month of signature on the wage increases agreed will be analysed in Section 4 of this paper.

3.3.1. Term of agreements

Another important characteristic of collective agreements is their term, i.e. the length of the period during which they are in force. This term is in turn a factor that can influence the degree of nominal inertia of the economy, in the sense that it can be expected that if the term of agreements is long, current wages will scarcely respond to changes in demand and, therefore, the variable most significantly affected will be unemployment (Layard *et al.*, 1991). Also, longer agreements increase the likelihood of a lack of synchronisation (i.e. an overlap) of their signature time, which would also negatively affect wage flexibility.

To analyse this characteristic in the available database, the observations had to be limited to those containing information on the dates of entry into force and expiry of the related agreement (43,196 observations, 72% of the total), in order to have a reliable measure of the term of the agreements. Also, since most multi-year agreements are reviewed yearly, a given agreement may have more than one entry in the database (one for each year in which it has economic effects), and this has to be taken into account so

⁷ These observations include some agreements signed more than a year after their period of application commenced, which may detract from the significance of the analysis. However, these make up less than 10% of the total.

as to count each multi-year agreement only once. Thus, in the period 1990-2001 there are observations on 26,255 different collective agreements, of which 46.1% are annual, 30.8% are biannual (or last between one and two years) and the other 23.1% have a term of more than two years. Weighting for the number of workers covered by each agreement, the percentage covered by annual agreements decreases slightly to 39.4%, basically losing ground to those lasting more than two years, which rise to 30.3% (see Table 8).

The trend over time (ignoring the first three years given the lack of data) shows a growing weight of multi-year agreements, particularly as a result of the rise in the percentage of agreements with a term between two and three years, and, to a lesser extent, of those lasting more than three years. The growing trend towards multi-year agreements is even more significant if the percentage of workers covered by them is analysed, since it has more than doubled between 1993 and 2001. This might be a result of a more stable macroeconomic environment (particularly after 1997), since this may make the bargaining agents more willing to enter into a longer-term commitment, i.e. to maintain for a longer time certain working conditions established in a multi-year agreement.

Analysis of bargaining level shows that at provincial industry level there is a predominance of agreements with a term of one year or less, which represent 53.9% of the total agreements negotiated at this level, covering (as seen in Table 9) 48.4% of workers subject to such agreements. As regards company-level agreements, 44% are annual. However, they only cover 31.2% of workers, most of whom (the remaining 68.8%) are subject to agreements with a term of more than one year. Much the same occurs with national agreements, of which 72.6% (73.5% of the workers covered) are multi-year. Therefore, the provincial agreements, which are those that cover the highest number of workers in Spain, have on average a shorter term than the agreements negotiated at other levels, although it should be mentioned that, as has happened in the total agreement figures, multi-year agreements grew notably in importance during the period analysed, covering nearly 70% of workers in 2001.

Turning to industries, in most of them the percentage of annual agreements is similar to that seen for the total agreements, with certain exceptions (see Table 10). In the case of energy, business services and other services, annual agreements have a lower than average weight (below 40%) and are outnumbered by those with a term of more than two years. By contrast, construction stands out for the high percentage of annual agreements (71.3%). These four industries differ even more sharply from the average if an analysis is made of the number of workers covered by each type of agreement. Moreover, in the hotel&restaurant industry and, particularly, in financial

services, although the proportion of agreements with a term of one year or less is near one-half, the percentage of workers covered by them is appreciably lower at 22.1% and 11.8%, respectively. Therefore nearly all industries coincide in having a high percentage of workers subject to multi-year agreements, except construction, in which it is only 19.3%.

In short, it seems that the great majority of collective agreements in Spain have a term of more than a year and that the proportion of these agreements has been growing during the period analysed (particularly that of agreements with a term of more than two years). This would mean lower wage flexibility in the face of changes in the macroeconomic environment, although it provides more stability to labour relations.

3.4. Inflation-adjustment clauses

It is generally said that inflation-adjustment clauses are used as a safeguard for workers against deviations from expected inflation: they may well allow smaller “ex-ante” wage increases, but once an upward inflation shock took place, it would give rise to larger “ex-post” wage increases. If this were so, the effect of the clauses would be greater in those industries in which wage increases (without a clause) were smaller. As can be seen in Table 11, the effect of the clauses is greater at company and at national level than at provincial level⁸.

One of the more interesting questions is whether the clauses guarantee the purchasing power of wages (i.e. whether they are calculated as the difference between the observed price growth and the rise in wage tariffs) or whether they guarantee the originally agreed gain in purchasing power (in this case, their effect would be the difference between observed inflation and expected inflation). Although the database includes variables on the threshold beyond which the clauses are effective, these are not very informative, because many observations are missing. In an attempt to approximate this information, a reference year was taken in which the clause had a significant effect. The year chosen was 2000, for which the official inflation forecast was 2%, while the year-on-year growth of the CPI in December was 4%. If the clauses had guaranteed the initial gains in purchasing power, their effect would have been approximately two percentage points, whereas if they had only been adjusted to the observed inflation, their effect would have been somewhat less, since they would only enable recovery of the difference between the increase established in collective agreements and the rate of inflation⁹. As can clearly be seen in Table 12, there are two tails in the distribution: on the one hand, for 43.6% of workers the effect of the clauses

⁸ Later we will look at whether the initial increases are indeed larger at the bargaining levels where the clauses have less effect, i.e. at provincial industry level.

⁹ In 2000 the increase in wage tariffs before including the clauses was 3.1%.

was nil, while for 29.5% it was two percentage points. The other intervals studied are rather less significant, although notably there are agreements that enable the recovery of more than two percentage points. This distribution exhibits significant differences depending on the bargaining level, since at company and national level, full recovery of the inflation deviation is the rule, while there are many clauses in provincial agreements that do not give rise to a larger wage increase.

The percentage of workers covered by clauses of this type is somewhat higher in provincial and national agreements than in company-level agreements. In 2000 and 2001 there was a general increase in the frequency of indexation clauses, attributable to the greater uncertainty of inflation (see Table 13). When the agreements are disaggregated by term (see Table 14), it is found that inflation-adjustment clauses are more frequent in annual agreements, despite the fact that inflation uncertainty is lowest in agreements of this type.

Another important aspect is whether or not the clauses are retroactive, i.e. whether they involve revision of wage tariffs in the year in which the inflation deviation occurs and, therefore, generate the payment of arrears, or whether they only give rise to adjustment of the wage tariffs to which the increase agreed for the following year is applied and, therefore, do not generate the payment of arrears. As can be seen in Table 15, around 60% of clauses are retroactive. Retroactive clauses are more common at company level (over 90%) and national level (about 80%), while they are less usual at provincial level (50%). There has been a very significant reduction in the percentage of retroactive clauses at provincial level, since in 1994-95 it was approximately 80%.

4. Multivariate analysis of wage increases

The previous sections aimed to broadly outline the Spanish collective bargaining system making use of the information available in the database. This section analyses how the various characteristics of collective agreements (particularly those mentioned earlier in this paper) affect the main bargaining item, i.e. the wage increase negotiated by the social actors. Special attention is paid to how the level of collective bargaining affects the resulting wage increases, both because of its empirical importance and in order to compare the predictions of different theoretical models. The multivariate analysis performed enables the effect of the bargaining level to be isolated from the effect of the other bargaining characteristics.

4.1. Bargaining level

The starting point of this analysis is the information presented in Chart 1, which shows the wage increases in the 1990s by bargaining level. The wage increases negotiated tend to be smaller at a more centralised level (national industry) and at the most decentralised level (company), while the largest wage increases are observed at an intermediate level of centralisation (the provincial industry level). This inverted U-shape relationship of wage increases with increasing centralisation of bargaining is consistent with the results of the theoretical models that predict higher wage pressure at intermediate levels than at more centralised or decentralised levels (see Calmfors and Drifill, 1988; and Layard *et al.*, 1991). Empirically it is also an important phenomenon, as negotiation at this intermediate bargaining level is the majority practice in Spain and around 50% of workers covered by collective agreements negotiate at this level.

However, this finding should be analysed more closely to find out whether it is a direct effect of bargaining level or whether it is caused by a differing composition of industries or of other characteristics associated with bargaining level. To do this, a regression of the agreed wage increases was estimated on a set of explanatory variables including bargaining level as well as other variables that may affect this result. These other variables included were as follows. First, dummy variables for the industries, in order to capture the effect of the different industry distribution at each bargaining level and its possible influence on the final result. Second, yearly and monthly dummy variables to capture the macroeconomic context in general¹⁰, and the effect on wage increases of the time when the negotiation took place. Third, two variables were included to reflect two key characteristics of collective agreements, namely the existence of indexation clauses and the multi-year nature of the agreement.

This regression was estimated for the period from 1990 to 2000 (the last year for which we have complete data), although yearly estimates were also made to check the robustness of the results obtained. Table 16 shows the results for the complete 1990-2000 period. The effect of bargaining level on wage increases has been captured through an dummy variable for each of them, distinguishing, at company level, between public- and private-sector firms in order to isolate the effect of public-sector firms on wage increases. Also, private-sector firms are grouped into four sizes: small (fewer than 30 workers), medium (30 to 100 workers), large (100 to 500 workers) and very large (over 500 workers).

The main finding of this regression analysis is that, once account is taken of the above-mentioned effect of the characteristics of agreements, the bargaining level has a

¹⁰ These yearly fictitious variables include the effect of all macroeconomic conditions, growth, inflation trend, etc.

considerable effect on the final outcome as measured in terms of the negotiated wage increase. Specifically, provincial industry agreements (those reflected by the constant term in the regression) give rise to significantly larger wage increases than national industry agreements (negotiated at a more centralised level) and than company-level agreements (the most decentralised). In the latter case, however, the result for private-sector firms with fewer than 30 workers is interesting: the negotiated wage increases are larger than those in the corresponding agreements at provincial industry level. In the other cases, the company-level agreements contain wage increases significantly smaller than those of provincial industry agreements. Also, as expected, wage increases were clearly more moderate in public-sector firms.

In interpreting the effect of firm size on wage increases, the larger increases in small firms may be explained as follows. If these firms, which normally have industry agreements¹¹, wish to secure a company-level agreement better suited to their needs, they have to offer larger wage increases to their workers¹². Meanwhile, company-level agreements in firms with more than 30 workers contain wage increases significantly smaller than those in industry agreements and, moreover, a growing negative effect is seen with increasing firm size. Thus large firms, which traditionally have had company-level agreements and have not been affected by industry agreements, usually negotiate wage increases that are even smaller than those prevailing at these higher bargaining levels. This indicates a greater internalisation by negotiating agents in these agreements of the negative impact that large wage increases could have on firms' results¹³. Also, contrary to what is sometimes argued, this indicates that, in the results of company-level bargaining, there are no discernible cascade effects in negotiation. That is to say, the agreements reached at higher than company level do not serve as a reference for bargaining at this level¹⁴.

The database has information on other collective agreement characteristics that may affect wage increases and bear on the outcome. However, the values of these variables are missing in many cases, so their use would entail a significant reduction in

¹¹ It should be noted that the percentage of small firms with company-level agreements is very low.

¹² It will be seen below that this phenomenon seems to have been limited to certain years, while in the rest of the period company-level agreements in firms of fewer than 30 workers also resulted in wage increases smaller than those in provincial industry agreements.

¹³ It will subsequently be seen, however, that wage levels are higher in company-level agreements. Fina *et al* (2001) also points out that there are other welfare benefits included in company-level agreements that are not found in industry agreements.

¹⁴ An additional check was made that there is no cascade effect on the wage increases included in company-level agreements. It was done by comparing the wage increase in these agreements with the wage increase in the provincial industry agreement of the industry (at the two-digit disaggregation level of the CNAE-93 classification) and the province to which the firm belongs. Again, as can be deduced from the regression, the results indicate that there is no bargaining cascade effect, i.e. in company-level bargaining the wage increases are, on average, smaller than in the corresponding provincial industry agreement.

the number of observations. Nevertheless, to check the robustness of the results on how bargaining level affects wage increases, Table 17 presents an additional regression in which the regressors included are, first, the existence of stoppages or demonstrations during collective bargaining and, second, the inclusion of matters other than wage increases in collective bargaining. Thus variables have been included to cater for an agreement with a reduction of working hours, clauses on employment or on the use of overtime, productivity incentives and attendance incentives.

As can be seen in this table, the use of these variables considerably reduces the number of observations (to around 20,000) and the estimate period is restricted to 1992-2000, but the main findings discussed above are substantially unchanged. Thus the effects of bargaining level remain significant and have the same sign.

Before analysing the yearly bargaining results, a brief mention should be made of the estimated effects of the other collective agreement characteristics included in the regression. Table 17 shows smaller wage increases in the industrial sector and in certain services such as trade and financial services. The results on the effect of the time when negotiation took place indicate that, although the differences are small, larger wage increases are achieved in the early months of the year. Regarding the effect of clauses on other matters included in collective agreements, most noteworthy is the positive effect that the inclusion of clauses on the reduction of working hours has on wage increases, although this result is tinged by the negative effect of bargaining on overtime. As expected, bargaining on productivity incentives reduces wage increases, although attendance incentives seem to make them larger. Finally, the effects of inflation-adjustment clauses and of multi-year agreements will be analysed later with the aid of the yearly regressions performed, since the effect of these variables depends crucially on the yearly change in inflation and, in general, on macroeconomic conditions.

We now return to the complete sample to analyse how collective bargaining has varied over time, i.e. to try to identify significant changes in the workings of the collective bargaining system during the 1990s. As briefly described in Section 2, legal reforms were made to the system in 1994 and 1997, so one of our aims is to detect whether they have changed the outcome of collective bargaining in any way. To this end, regressions such as that shown in Table 16 were performed for each year of the sample. The results indicate that the basic conclusions do not change. Collective bargaining at provincial industry level gives rise to larger wage increases than bargaining at higher and at lower levels, although a certain variability was observed over the eleven years analysed.

Analysing first the effect of company-level bargaining, Chart 2 indicates that the above-mentioned finding that small private-sector firms paid larger wage increases than

at provincial industry level is substantially restricted to the mid-1990s (1994 to 1998)¹⁵. This could be related to the 1994 reform which was intended, among other things, to strengthen company-level bargaining, and which made get-out clauses compulsory in collective agreements with a view to defining the conditions under which a firm could be released from the industry agreement. These clauses were not particularly important because they generally imposed conditions that were too strict, and apparently the firms that sought to avail themselves of the possibility of negotiating their own agreement had to accept larger wage increases as the price paid in exchange. In the case of large firms, Chart 3 shows how company-level agreements generally offer significantly smaller wage increases. In medium-sized firms (not shown for brevity), the result is similar and, although at a lower level of significance, the smaller wage increases were maintained throughout the whole decade analysed.

Turning to wage increases in public-sector firms in the sample period, Chart 4 shows that, although for all years the increase negotiated in these firms is smaller than that at the reference bargaining level (provincial industry agreement), the effect of the sharp budget restrictions in 1993, 1994 and 1997 can be clearly seen. Also calling for comment is the growing wage moderation from 1999 onwards. Finally, Chart 5 shows how the finding that industry agreements at national level lead to smaller wage increases than at provincial level is repeated in most of the years analysed.

It should be mentioned briefly that the agreed wage increases are affected by the time when negotiation takes place. Although the estimated impact is small, there is a positive effect on the agreements signed in the first half of the year which tapers off, although remaining positive, in the second half. There is therefore no evidence of a cascade effect in bargaining whereby the initial agreements serve as a reference for the others. Also, several tests were made to detect any effect of “ultra-activity” of agreements. Using a regression like that in Table 16, variables were included to capture this effect by calculating the difference between the time when the new agreement was signed and the expiry date of the previous agreement. In none of the various equations estimated were significant results obtained. The “ultra-activity” of agreements probably has more effect on the non-monetary conditions established in agreements, whereas a significant effect on wage increases is not detectable.

¹⁵ In Charts 2 to 7 below, the bars represent the coefficients estimated in each of the yearly regressions performed, while the lines running down the middle of the bars represent the 90% confidence intervals for these coefficients.

4.2. Inflation-adjustment clauses and multi-year agreements

The yearly regressions described above include a variable to reflect whether or not the agreement contains an indexation clause to protect against higher-than-expected inflation. This variable should be analysed in yearly regression calculations, since its interpretation in the regression for the complete decade is more complicated.

In Chart 6 the first bar for each year represents the effect of inflation-adjustment clauses in collective agreements. It can be seen that, for various years of the decade analysed, these clauses have enabled the signature of agreements with smaller wage increases than those in agreements without clauses. Thus these clauses act as a safeguard for workers against unexpectedly high inflation, allowing more moderate wage increases. As can be seen in the chart, this effect is significant early and late in the decade, when inflation exceeded the initially negotiated reference values, whereas in the mid-1990s the sharp fall in inflation meant that these clauses did not significantly affect wage increases.

The second bar for each year represents the effect of the clauses on the revised wage increase, i.e. once the effect of the clause has been added to the initially negotiated increase. Generally, once the effect of application of the clause has been included, the agreements with a clause give rise to larger wage increases than those with no clause. That is to say, the safeguard effect of the clauses for workers gives rise to a larger wage increase if inflation finally exceeds the forecasts. Only at the beginning of the decade did the clauses have a negative effect on revised wage increases.

Chart 7 depicts the effect of multi-year bargaining on negotiated wage increases. Multi-year agreements adjust more slowly to changes in macroeconomic conditions, as would be expected. Specifically, it seems that the fall in inflation since the early 1990s was reflected in these agreements later than in annual agreements, while the growing inflation in the late 1990s had the opposite effect, there being larger wage increases in annual agreements.

In short, the analysis performed, both for the overall period and yearly, has given rise to a number of basic findings. The first is that the bargaining level has a major effect on the negotiated wage increases. Specifically, wage negotiation at an intermediate level –such as the majority provincial industry level in Spain– produces wage increases larger than those at company level and at the more centralised national level. This finding is in line with the predictions of theoretical models, which forecast higher wage pressure at an intermediate bargaining level because the benefit derived from the co-ordination at more centralised levels is not achieved and, moreover, the

consequences of larger wage increases are not internalised as at more decentralised levels. In this context, the fact that at least for some years in small firms, company-level bargaining produces larger wage increases seems to be more related to the difficulty that these firms have in gaining access to a company-level collective agreement.

Additionally, the analysis turned up other findings of interest relating to the effects of other major characteristics of collective agreements. The existence of inflation-adjustment clauses to safeguard against inflation produces, at least ex-ante, smaller wage increases. That is to say, these clauses act as a safeguard for workers against uncertainty over the course of inflation. However, once the behaviour of inflation is known, if inflation exceeds the forecast, then the presence of indexation clauses usually produces larger wage increases. Finally, multi-year agreements seem to cause wage increases to adjust more slowly to changes in the macroeconomic environment.

5. Collective bargaining and wage differentiation

Collective agreements, apart from setting wage increases and other matters relating to working conditions, determine minimum guaranteed wage levels that must be observed by the firm in question. The workers' final compensation will differ from that minimum due to various wage supplements, but unquestionably these agreed minimum levels determine a good part of the wage structure. Therefore it is useful to analyse how the characteristics of the collective bargaining system affect wage differentials in Spain, the latter being defined in terms of those minimum wage levels.

The database has information on the wage compensation guaranteed by each collective agreement, with a breakdown into eleven job categories¹⁶, although this information is only available since 1994. The foregoing sections have shown how bargaining levels are a basic characteristic of the Spanish collective bargaining system, in which a majority of workers are covered by industry agreements at provincial level, and this has consequences for the final outcome of bargaining, as measured in terms of the wage increases negotiated. We now analyse whether the division into bargaining levels affects the distribution of wage levels set in collective agreements, in two respects: as regards the differences between job categories at different bargaining levels, and as regards the wage differentials caused by bargaining level within each job category.

In an initial analysis of how bargaining level affects wage differentials between job categories resulting from collective bargaining, use can be made of the income ratios between professional categories at each bargaining level. Specifically, we calculated the

¹⁶ They are the same as the social security registration groups.

ratio of the income established for the top category (university graduates) to that of the bottom category (manual labourers), the ratio of the income of university graduates to that of an intermediate skill level (administrative officers), and the ratio of the income of administrative officers to that of manual workers. Chart 8 sets forth the yearly changes in the first of these ratios in company-level agreements and in industry agreements, the latter grouping together both provincial and national agreements. It can be seen that industry-level bargaining strongly compresses the wage distribution and significantly reduces wage differentials between skill levels. The chart shows that this phenomenon has been highly stable since 1994. It therefore seems that the bargaining agents have an interest in agreeing on smaller wage differentials between job categories at bargaining levels higher than that of the company. Various studies have associated this wage compression with the objectives of the social partners, particularly trade unions, and with average-voter theories [see, for example, Abellán *et al* (1997) or Dolado *et al* (1997)].

This result is unchanged for the other two income ratios discussed, shown in Charts 9 and 10, namely the ratio of university graduate income to administrative officer income and the ratio of administrative officer income to manual worker income, respectively. In both cases the differences between bargaining levels are minor, particularly in the university graduate to administrative officer ratio, and it is apparent that industry-level bargaining has a clear compressor effect on the wage distribution. In a disaggregated analysis at the level of the eleven broad industries considered in preceding sections, this compression of the wage distribution is observed for all industries. Chart 11, which plots the ratio of university graduate income to manual worker income for 2000, shows that company-level agreements generate a wider wage dispersion in all industries except agriculture. Noteworthy here is the scant wage dispersion in the extractive, hotel&restaurant and transport industries when bargaining is at industry level and the large differences between bargaining levels in the construction, transport and financial and business services industries.

It thus seems clear that company-level bargaining generates wider wage dispersion between job categories than bargaining at higher levels does. That said, the industry level is relatively broad in Spanish collective bargaining and it should be ascertained whether major differences exist at industry level depending on whether bargaining is at provincial level (50% of workers) or at national level (25% of workers). Chart 12 shows (only for 2000 given the above-mentioned stability) the income ratios between job categories at each bargaining level, distinguishing provincial industry and national industry agreements. Although both these higher-level agreements give rise to greater wage compression than company-level agreements, national agreements involve more wage dispersion than provincial agreements, particularly in the upper part

of the job category distribution. Hence provincial industry agreements are characterised by a lower wage dispersion between job categories, not only compared with company-level agreements, but also compared with national industry agreements.

As noted, this is particularly true for the upper part of the job category distribution, whereas the wage differentials in the lower part of this distribution seem similar in both types of industry agreement. Abellán *et al* (1997), for example, describe an upward effect on the wages of lower job categories in provincial agreements with respect to national agreements¹⁷. To analyse this effect, Chart 13 plots the ratio of guaranteed income in national agreements to guaranteed income in provincial agreements for the disaggregation of the ten job categories available. In effect, it can be seen that, although the national agreements guarantee a higher wage level for more highly skilled workers (long-cycle graduates, short-cycle graduates, chief administrative officers and workshop chiefs), this is not so for intermediate skill levels, where the guaranteed wage levels are higher in provincial industry agreements than in national industry agreements (the income ratio is less than 1). It thus seems that at provincial level (the majority Spanish collective bargaining level), the bargaining agents prefer to raise the income of the intermediate skill levels¹⁸.

Finally, to complete the analysis of intra-category differences and check the effect of bargaining level on them, Chart 14 shows the ratio, for 1994 and 2000 and the ten job categories, of total guaranteed compensation in company-level agreements to that in industry agreements, again grouping together provincial and national agreements. For all job categories, the wage levels set in company-level agreements are higher than in industry agreements. These differences are considerably larger for high worker skill levels, and are smallest for intermediate skill levels. In all cases, the stability throughout the period analysed is notable.

By way of a summary of the information presented so far on how the bargaining level affects the degree of wage differentiation deriving from collective bargaining, Chart 15 sets forth histograms of the wage income established in the 2000 agreements for the ten job categories and of the average wage settlements¹⁹, distinguishing industry and company-level agreements. The wage distributions are notably more compressed in industry agreements than in company-level agreements for all job categories and the wage compression increases with decreasing skill level. In aggregated terms, the average wage settlement therefore exhibits a notably wider dispersion in company-level

¹⁷ Their database only includes the construction and the manufacturing agreements for 1990.

¹⁸ Analysis of the distribution of workers by job category also shows that in provincial agreements the proportion of workers with intermediate skill levels is higher.

¹⁹ Calculated as the weighted average income of job categories, using the number of workers in each category as the weight.

agreements. This can also be seen from the fact that the Gini coefficient has a value of 0.29 in company-level agreements, whereas it is 0.11 in industry agreements.

To sum up, this section has presented abundant empirical evidence of the effect that collective bargaining has on wage differentiation in Spain. Specifically, it has shown how the majority bargaining level (the provincial industry level) exerts a very strong compressor effect on wage distribution. The wage levels negotiated at this level are notably more homogeneous across job categories than at company level, and also more uniform than at national industry level. Moreover, the wage dispersion within each category is lower in industry agreements than in the case of company-level agreements. Also detected were notable wage differentials in favour of company-level agreements which become more pronounced with increasing worker skill level. A comparison of provincial industry and national industry agreements shows that these differences are in favour of the latter at high worker skill levels, whereas at intermediate skill levels there are positive differences for provincial agreements that seem to be related to the workers represented by the bargaining agents.

6. Summary and conclusions

This paper has used individual information on all collective agreements in force in Spain between 1990 and 2001, drawn from the official statistics on collective agreements compiled by the Spanish Ministry of Labour and Social Security, to conduct an analysis of the main collective bargaining characteristics and identify their effects on bargaining outcomes.

The empirical evidence suggests that the bargaining level has a major effect on both the wage increases and the distribution of wage levels by job category established in collective agreements. In the first case, the intermediate bargaining level (provincial industry level) sees wage increases that are generally larger than those agreed at a more centralised (national industry) level and at a more decentralised (company) level. This is in line with various theoretical studies that report that intermediate bargaining levels achieve less efficient outcomes in terms of adjusting wage behaviour to labour market conditions. On the one hand, a more centralised bargaining level would facilitate the incorporation of constraints derived from the macroeconomic environment; on the other, at a more decentralised level the bargaining outcome would be better tailored to the firm's specific conditions and the bargaining agents would perceive more directly the costs of the higher wage pressure. All this is particularly relevant in the case of Spain, given that more than half of the workers subject to collective agreements negotiate at this intermediate (provincial industry) level.

Our analysis of the characteristics of collective agreements and of their effect on agreed wage increases yielded notable conclusions on the effect of inflation-adjustment clauses when inflation deviates from forecasts. These clauses act as a safeguard against uncertainty over future inflation, whereby they initially lead to smaller wage increases than those set in agreements without clauses. However, the indexation induced by the clauses means that subsequently, when there is an upward inflation deviation, the revised wage increases are higher than those established in agreements without clauses.

Regarding the effect of bargaining level on wage structure, bargaining at higher than company level produces a notable compression of the wage structure established in collective agreements. Bargaining at these levels very clearly reduces the dispersion of the wage levels guaranteed in collective agreements, both between different worker skill levels (job categories) and between workers of the same skill level. Also, bargaining has a positive effect at the (majority) provincial industry level on the guaranteed income of intermediate category workers.

Finally, it should be noted that the approach adopted is basically descriptive and that appropriately defined wage equations will be estimated in a second phase in which the information on collective agreement characteristics will be combined with that on firms from the Banco de España Central Balance Sheet Data Office. This will provide the information required to estimate these equations and, it is hoped, will enable us to corroborate the findings presented here on the effect of collective bargaining level and to analyse in more detail the influence of collective bargaining on the workings of firms.

Table 1**Distribution of workers covered by collective agreements according to bargaining level (%)**

	Industry					Company
	Local	Provincial	Intra-regional	Inter-regional	National	
1990	0.15	54.74	2.81	1.17	26.10	15.02
1991	0.13	56.01	2.67	1.21	25.04	14.94
1992	0.13	54.78	3.69	1.06	25.13	15.22
1993	0.16	55.06	6.13	3.19	21.57	13.89
1994	0.19	54.73	4.09	2.59	24.37	14.03
1995	0.15	55.25	3.12	0.24	27.14	14.09
1996	1.68	51.91	5.27	0.23	27.42	13.49
1997	0.16	51.37	5.76	0.06	30.30	12.35
1998	0.13	51.84	6.01	0.10	29.71	12.21
1999	0.17	52.07	5.51	0.07	29.74	12.43
2000	0.13	52.89	8.07	0.02	26.83	12.07
2001	0.12	55.30	9.44	0.00	24.39	10.74
Average 1990-2001	0.28	53.75	5.29	0.79	26.59	13.32

Source: Ministry of Labour & Social Security and Banco de España.

Table 2**Average firm size by bargaining level**

	Company	Provincial industry	National industry
1990	346.16	14.33	124.55
1991	329.37	15.83	131.77
1992	324.95	14.24	143.97
1993	307.66	13.99	47.07
1994	313.88	16.00	63.90
1995	298.45	14.51	202.00
1996	287.40	15.22	213.74
1997	269.89	14.68	238.44
1998	276.17	15.11	232.47
1999	286.62	16.02	234.47
2000	279.32	16.37	246.81
2001	261.80	16.68	279.39
Average 1990-2001	298.00	15.22	185.50

Source: Ministry of Labour & Social Affairs and Banco de España.

Table 3**Distribution of workers by bargaining level and industry (CNAE-93 sections) (%). 1990-2001**

	Industry					Company
	Local	Provincial	Intra-regional	Inter-regional	National	
Agriculture	0.24	88.58	7.82	0.07	2.85	0.45
Extractive industries	0.08	27.35	4.42	0.00	0.56	67.59
Manufacturing	0.06	44.44	0.31	0.30	39.55	15.34
Energy	0.03	5.05	0.41	0.00	0.00	94.52
Construction	1.24	97.82	0.00	0.00	0.00	0.94
Wholesale & retail trade	0.41	67.00	4.77	1.63	19.99	6.20
Restaurants & hotels	0.00	78.60	18.42	0.00	0.00	2.98
Transport	0.25	43.08	0.21	0.37	8.32	47.77
Financial services	0.03	0.46	0.00	8.62	81.85	9.04
Business services	0.05	29.77	24.29	0.34	40.78	4.75
Other services	0.25	21.40	8.76	0.61	40.01	28.98
Total	0.28	53.75	5.29	0.79	26.59	13.32

Source: Ministry of Labour & Social Affairs and Banco de España.

Table 4**Workers covered by collective agreements with clauses on other matters, by bargaining level (%)**

	Industry			Company		
	1994	2000	Average 1994-2000	1994	2000	Average 1994-2000
Reduction of working hours	13.1	33.8	18.5	7.9	27.9	13.3
Hiring (a)	60.0	80.2	74.5	21.1	65.3	60.6
Employment	42.8	55.9	54.9	62.3	68.7	68.8
Overtime	43.7	43.5	41.9	46.2	45.4	47.2
Retirement	36.0	52.4	46.6	46.6	54.7	54.7
Other benefits	52.5	68.2	61.1	73.9	75.6	78.4
Pensions	1.9	2.1	2.6	16.5	34.8	29.1
Vocational training	45.2	51.7	53.5	57.0	68.8	65.5
Minimum wage	28.7	30.0	30.5	18.8	20.0	21.9
Restaurant	0.0	0.0	0.0	21.1	21.3	23.0
Transport	0.0	0.0	0.0	20.5	22.6	22.0
Productivity incentives	23.8	20.4	23.3	54.3	53.0	53.5
Attendance incentives	21.6	17.6	19.1	33.7	29.8	31.8

Source: Ministry of Labour & Social Affairs and Banco de España.

(a) The first data item relates to 1996 and the average to the period 1996-2000.

Table 5

Distribution of agreements by month of signature (%)

	Month of signature												May-Jul
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1990	4.4	6.9	13.6	15.1	18.5	14.7	11.3	2.3	2.8	4.0	3.6	2.9	44.5
1991	3.0	5.8	7.2	13.6	19.4	18.0	14.0	2.6	4.2	4.9	3.4	4.1	51.3
1992	5.1	6.2	9.4	13.8	14.3	16.4	13.9	2.7	5.1	5.1	3.8	4.2	44.6
1993	3.3	6.1	8.4	9.4	13.2	17.8	13.9	2.6	4.6	8.0	6.8	6.0	44.9
1994	3.7	3.9	5.6	5.1	10.0	14.9	15.8	4.4	7.6	9.8	9.7	9.4	40.7
1995	4.6	6.6	8.1	8.3	14.3	15.5	12.6	3.3	4.8	7.7	7.6	6.7	42.4
1996	5.5	6.0	7.7	7.4	12.5	14.1	14.4	2.9	6.1	7.8	6.4	9.2	41.0
1997	5.2	6.4	8.3	10.6	11.7	12.8	14.3	2.6	5.0	6.8	7.2	9.1	38.8
1998	6.1	6.1	8.6	9.9	13.1	15.3	13.2	2.2	4.6	6.7	7.0	7.3	41.6
1999	5.1	5.1	8.1	8.5	15.1	15.7	13.1	2.0	4.7	6.4	7.3	8.8	43.9
2000	5.0	7.5	10.0	9.5	12.4	14.1	12.7	2.7	5.5	6.4	6.6	7.5	39.3
2001	7.2	9.4	11.8	10.9	15.7	15.0	16.0	4.1	3.4	4.4	1.7	0.4	46.7
Average 90-01	4.8	6.2	8.8	10.2	14.1	15.3	13.7	2.8	4.9	6.5	6.0	6.5	43.2

Source: Ministry of Labour & Social Affairs and Banco de España.

Table 6

Distribution of agreements by month of signature and bargaining level (%)

	Month of signature												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	May-Jul
Company	5.2	6.8	9.4	10.4	14.1	14.4	12.3	2.9	5.1	6.7	5.9	6.8	40.7
Provincial industry	3.7	4.5	7.1	9.5	14.4	18.2	17.7	2.6	4.5	6.1	6.3	5.5	50.3
National industry	2.4	5.0	7.4	9.1	15.4	19.0	17.0	0.5	4.4	6.9	5.6	7.2	51.4

Source: Ministry of Labour & Social Affairs and Banco de España.

Table 7

Distribution of agreements by month of signature and industry (%), 1990-2001

	Month of signature												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	May-Jul
Agriculture	5.0	6.2	9.3	8.7	15.3	11.7	12.7	5.0	4.4	7.2	7.2	7.2	39.7
Extractive industries	4.6	3.7	6.3	8.9	15.4	17.4	17.5	2.9	4.8	7.9	6.4	4.2	50.3
Manufacturing	3.4	5.2	9.0	11.7	16.0	16.3	14.7	2.1	5.2	6.2	5.2	4.9	47.0
Energy	4.6	6.2	7.5	9.2	12.1	16.1	14.2	3.4	4.4	7.4	7.2	7.6	42.5
Construction	2.9	3.9	8.1	9.6	18.6	27.5	18.6	1.4	2.6	2.7	2.0	2.3	64.6
Wholesale & retail trade	4.5	6.9	8.9	10.3	13.7	14.5	14.3	2.5	5.0	7.4	6.0	6.0	42.5
Restaurants & hotels	5.8	6.2	9.4	9.5	15.5	15.6	14.4	4.4	5.2	4.9	3.6	5.5	45.4
Transport	5.6	6.7	8.0	9.5	12.6	15.4	13.6	4.3	4.6	6.7	6.9	6.1	41.6
Financial services	7.4	6.8	8.7	10.0	8.5	11.1	10.5	1.1	4.3	8.2	9.3	14.1	30.1
Business services	6.9	7.2	9.5	9.5	11.4	14.5	11.2	2.6	5.3	6.4	6.5	8.9	37.1
Other services	6.2	7.2	8.8	8.8	12.8	14.1	12.0	3.1	4.9	6.6	6.9	8.6	38.9

Source: Ministry of Labour & Social Affairs and Banco de España.

Table 8**Distribution of workers by agreement term and year of commencement of term (%)**

	Multi-year (years)				
	Annual	1-2	2-3	>3	Total
1990	0.0	0.0	0.0	100.0	100.0
1991	0.0	12.6	70.3	17.1	100.0
1992	4.1	61.5	10.0	24.4	99.9
1993	62.6	25.8	7.6	4.0	99.9
1994	53.7	35.7	9.1	1.5	99.9
1995	53.6	36.6	8.8	1.0	99.9
1996	37.7	30.0	17.1	15.2	99.9
1997	35.7	28.0	24.8	11.5	99.9
1998	38.5	24.8	30.1	6.6	99.9
1999	26.5	34.0	33.6	5.9	99.9
2000	18.0	24.2	40.4	17.3	99.9
2001	21.6	24.9	35.5	18.0	99.9
Average 90-01	39.4	30.3	21.5	8.8	99.9

Source: Ministry of Labour & Social Affairs and Banco de España.

Table 9**Distribution of workers by agreement term and bargaining level (%).
1990-2001**

		Multi-year (years)			
	Annual	1-2	2-3	>3	Total
Company	31.2	35.5	22.5	10.8	68.8
Provincial industry	48.4	28.2	18.1	5.2	51.6
National industry	26.5	32.2	27.7	13.6	73.5

Source: Ministry of Labour & Social Affairs and Banco de España.

Table 10**Distribution of workers by agreement term and industry (%).
1990-2001**

	Annual	Multi-year (years)			Total
		1-2	2-3	>3	
Agriculture	41.5	35.1	22.7	0.7	58.5
Extractive industries	35.5	33.5	17.7	13.3	64.5
Manufacturing	37.5	35.7	19.5	7.4	62.5
Energy	23.5	32.6	32.3	11.5	76.5
Construction	80.7	6.2	10.3	2.8	19.3
Wholesale & retail trade	34.1	38.6	14.4	12.9	65.9
Restaurants & hotels	22.1	31.9	41.7	4.3	77.9
Transport	34.0	35.1	24.8	6.1	66.0
Financial services	11.8	13.9	41.9	32.4	88.2
Business services	23.9	22.3	30.4	23.5	76.1
Other services	26.2	35.4	27.9	10.4	73.8

Source: Ministry of Labour & Social Affairs and Banco de España.

Table 11**Effect of inflation-adjustment clauses by bargaining level (%)**

	Industry					Company	Total
	Local	Provincial	Intra-regional	Inter-regional	National		
1990	0.01	0.13	0.07	0.06	0.25	0.54	0.22
1991	0.01	0.03	0.00	0.08	0.00	0.17	0.05
1992	0.04	0.04	0.01	0.28	0.10	0.16	0.08
1993	0.09	0.08	0.02	0.23	0.08	0.14	0.09
1994	0.21	0.24	0.05	0.53	0.16	0.30	0.23
1995	0.14	0.22	0.11	0.47	0.35	0.33	0.27
1996	0.00	0.03	0.01	0.00	0.00	0.01	0.02
1997	0.00	0.00	0.00	0.00	-0.01	0.01	0.00
1998	0.00	-0.01	0.00	0.00	0.00	0.00	0.00
1999	0.22	0.18	0.48	0.00	0.38	0.38	0.28
2000	0.79	0.45	0.42	0.00	0.96	0.81	0.63
2001	0.31	0.10	0.02	0.00	0.23	0.23	0.14

Source: Ministry of Labour & Social Affairs and Banco de España.

Table 12

**Percentage of workers subject to inflation-adjustment clauses by effect of clause and bargaining level.
2000**

Effect of clause (a)	Bargaining level			Total
	Company	Provincial industry	National industry	
0	13.76	56.75	22.12	43.63
0-0,5	1.53	2.52	10.98	4.72
0,5-1	7.60	6.77	1.34	4.63
1-1,5	12.71	11.26	5.41	9.01
1,5-2	4.36	2.94	12.27	5.68
2	51.29	18.26	43.98	29.54
>2	8.74	1.49	3.89	2.78

Source: Ministry of Labour & Social Affairs and Banco de España.

(a) The official inflation forecast in 2000 was 2%, whereas the year-on-year CPI growth rate 4%.

Table 13**Percentage of workers with inflation-adjustment clauses by bargaining level (%)**

	Industry					Company	Total
	Local	Provincial	Intra-regional	Inter-regional	National		
1990	15.93	58.69	5.25	97.32	69.99	68.02	61.92
1991	10.48	62.19	5.11	95.15	68.11	63.51	62.67
1992	32.03	59.57	41.89	97.49	76.73	61.19	63.84
1993	31.72	62.24	50.40	98.95	50.63	47.74	58.12
1994	35.32	58.97	37.94	98.18	32.48	47.94	51.08
1995	27.39	63.15	62.00	48.92	61.12	60.19	62.06
1996	95.78	64.29	28.55	45.18	52.14	54.35	58.22
1997	41.51	56.75	49.06	0.00	51.62	38.93	52.49
1998	42.50	50.11	39.87	60.18	50.03	38.30	48.03
1999	28.25	58.66	67.51	77.03	64.03	43.68	58.84
2000	63.28	64.97	75.12	0.00	73.94	52.06	66.62
2001	53.82	72.99	78.14	0.00	75.02	60.71	72.63

Source: Ministry of Labour & Social Affairs and Banco de España.

Table 14**Percentage of workers with inflation-adjustment clause by agreement term (%)**

	Annual	Multi-year
1990	58.67	63.75
1991	64.85	61.77
1992	51.43	66.52
1993	62.14	55.98
1994	67.78	40.17
1995	72.80	57.00
1996	66.57	55.40
1997	65.17	49.37
1998	71.82	42.74
1999	74.73	56.30
2000	69.17	66.41
2001	75.44	72.39

Source: Ministry of Labour & Social Affairs
and Banco de España.

Table 15**Percentage of retroactive inflation-adjustment clauses by bargaining level (%)**

	Industry					Company
	Local	Provincial	Intra-regional	Inter-regional	National	
1990	11.6	19.3	63.6	6.5	32.8	68.2
1991	10.8	7.7	0.0	12.8	0.0	46.1
1992	20.3	24.9	3.8	88.1	35.4	66.8
1993	99.0	9.9	1.6	40.1	64.0	35.1
1994	79.4	75.7	13.6	100.0	77.7	93.9
1995	100.0	77.7	23.6	100.0	90.9	79.4
1996	2.7	62.5	97.6	100.0	80.6	80.4
1997	100.0	51.2	43.4	0.0	80.4	89.5
1998	100.0	59.1	13.1	0.0	77.5	91.0
1999	100.0	42.2	65.3	0.0	71.1	90.6
2000	100.0	48.3	30.1	0.0	80.0	90.5
2001	100.0	57.4	29.6	0.0	87.5	91.4

Source: Ministry of Labour & Social Affairs and Banco de España.

Table 16

**Salary increases versus various agreement characteristics (a)
1990-2000.**

	Co-efficient	Standard deviation	t
Constant	8.6878	0.0697	124.65
Public-sector firm	-0.7923	0.0438	-18.08
Private-sector firm. <30 workers	0.0829	0.0380	2.18
Private-sector firm. 30-100 workers	-0.0729	0.0352	-2.07
Private-sector firm. 100-500 workers	-0.2306	0.0366	-6.30
Private-sector firm. >500 workers	-0.4840	0.0577	-8.40
Sectoral / Local	0.0928	0.1520	0.61
Sectoral / Intra-regional	-0.2124	0.1429	-1.49
Sectoral / Inter-regional	-0.2081	0.3017	-0.69
Sectoral / National	-0.3487	0.0968	-3.60
Agriculture	-0.0673	0.0872	-0.77
Extractive industries	-0.5924	0.0929	-6.37
Manufacturing	-0.2085	0.0334	-6.24
Energy	-0.0811	0.0718	-1.13
Construction	-0.2337	0.0978	-2.39
Wholesale & retail trade	-0.3342	0.0421	-7.93
Restaurants & hotels	-0.0574	0.0712	-0.81
Transport	-0.1142	0.0447	-2.56
Financial services	-0.3294	0.1119	-2.94
Business services	-0.1841	0.0573	-3.21
January	0.0763	0.0681	1.12
February	0.2464	0.0636	3.87
March	0.1459	0.0586	2.49
April	0.1266	0.0569	2.23
May	0.1662	0.0538	3.09
June	0.1710	0.0531	3.22
July	0.1375	0.0541	2.54
August	0.1603	0.0818	1.96
September	0.0626	0.0676	0.93
October	0.0011	0.0626	0.02
November	0.1005	0.0635	1.58
Inflation-ajdustment clause	-0.2357	0.0237	-9.94
Multi-year agreement	0.0203	0.0253	0.80
Adjusted R ² :	0.42		
Number of observations:	52,629		

Source: Ministry of Labour & Social Security and Banco de España.

(a) The regression includes dummy time variables. The constant term defines a provincial-industry level agreement signed in the "other services" industry in December for 1990, with a 1-year term and without an inflation-adjustment clause.

Table 17

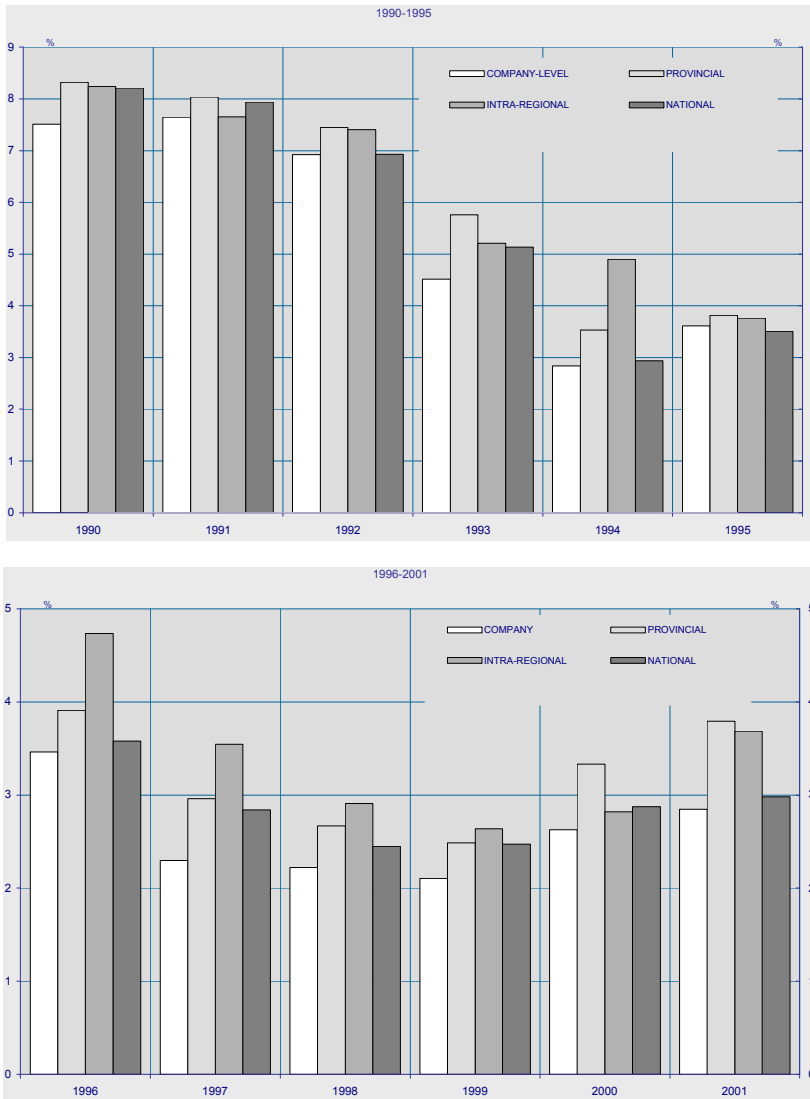
**Wage increases versus various agreement characteristics (a)
1992-2000.**

	Co-efficient	Standard deviation	t
Constant	6.7487	0.2332	28.93
Public-sector firm	-0.9191	0.0481	-19.10
Private-sector firm. <30 workers	0.2206	0.0424	5.21
Private-sector firm. 30-100 workers	-0.0247	0.0399	-0.62
Private-sector firm. 100-500 workers	-0.1400	0.0422	-3.32
Private-sector firm. >500 workers	-0.3280	0.0682	-4.81
Sectoral / Local	-0.0819	0.1626	-0.50
Sectoral / Intra-regional	-0.1559	0.1656	-0.94
Sectoral / Inter-regional	-0.1090	0.2937	-0.37
Sectoral / National	-0.3682	0.1033	-3.57
Agriculture	0.0379	0.0999	0.38
Extractive industries	-0.2286	0.1107	-2.07
Manufacturing	-0.1426	0.0376	-3.80
Energy	0.1681	0.0815	2.06
Construction	-0.4264	0.1130	-3.77
Wholesale & retail trade	-0.2550	0.0464	-5.49
Restaurants & hotels	0.0200	0.0759	0.26
Transport	-0.1555	0.0492	-3.16
Financial services	-0.2641	0.1197	-2.21
Business services	-0.0736	0.0637	-1.16
January	0.2149	0.0742	2.90
February	0.3534	0.0699	5.06
March	0.4118	0.0649	6.35
April	0.4419	0.0644	6.86
May	0.4238	0.0590	7.18
June	0.2880	0.0572	5.03
July	0.2482	0.0578	4.29
August	0.2242	0.0850	2.64
September	0.1301	0.0710	1.83
October	0.1664	0.0648	2.57
November	0.1128	0.0667	1.69
Inflation-adjustment clause	0.0253	0.0261	0.97
Multi-year agreement	0.0935	0.0286	3.27
Strikes during agreement	-0.0283	0.0634	-0.45
Demonstrations during agreement	0.0193	0.0652	0.30
Reduction of working hours	0.2947	0.0402	7.34
Other clauses on employment	0.0009	0.0312	0.03
Clauses on overtime	-0.1123	0.0271	-4.14
Production incentives	-0.1285	0.0309	-4.15
Attendance incentives	0.0845	0.0309	2.73
Adjusted R ² :	0.1732		
Number of observations:	20,542		

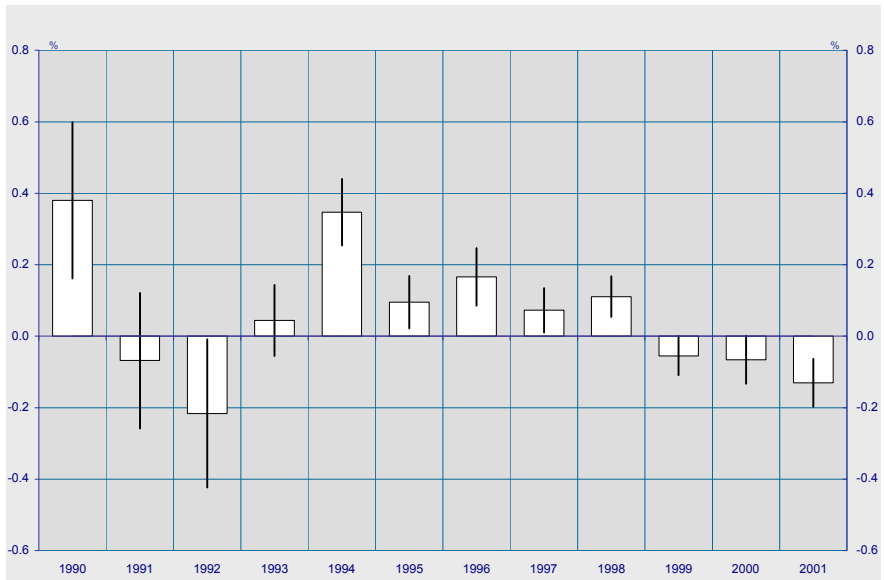
Source: Ministry of Labour & Social Security and Banco de España.

(a) The regression includes dummy time variables. The constant term defines a provincial-industry level agreement signed in the "other services" industry in December for 1992, with a 1-year term and without an inflation-adjustment clause.

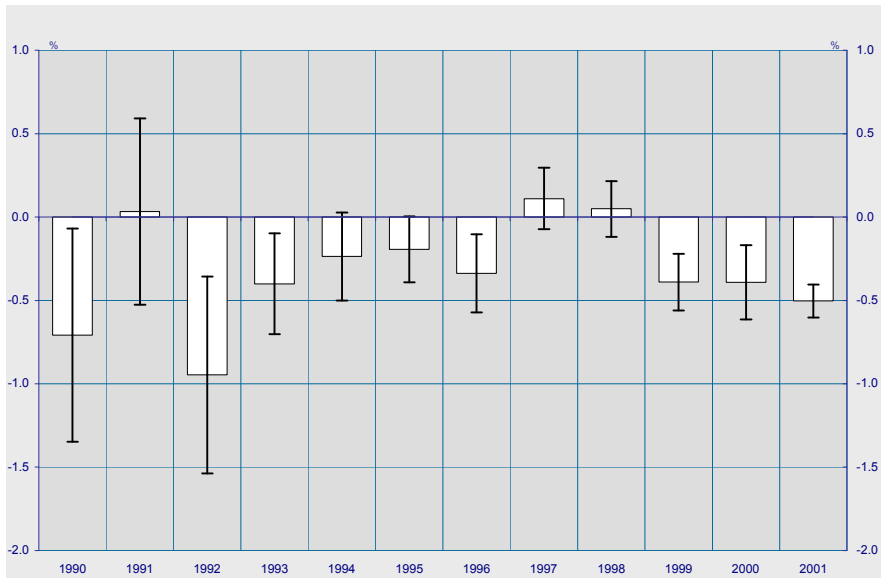
Wage increases and level of centralisation of bargaining



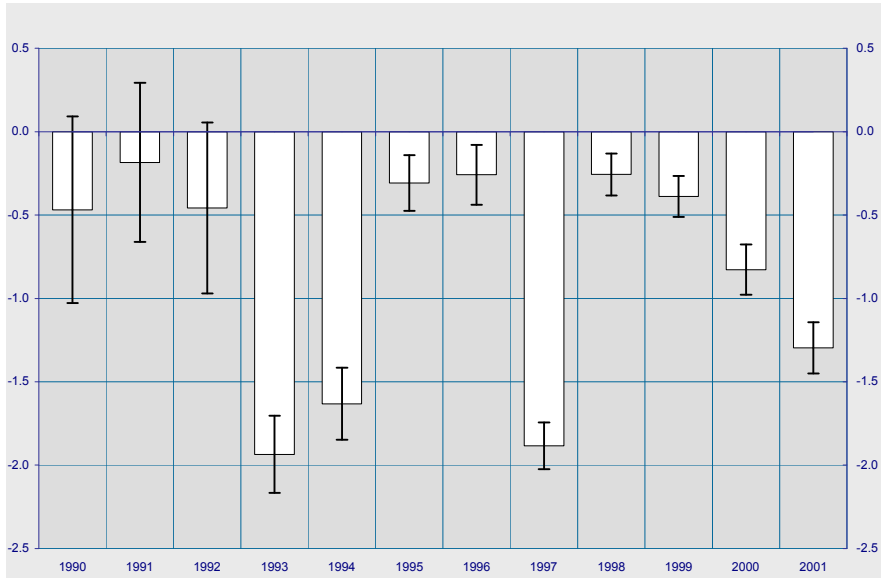
Source: Ministry of Labour & Social Affairs and Banco de España.

Effect of company-level bargaining in small firms

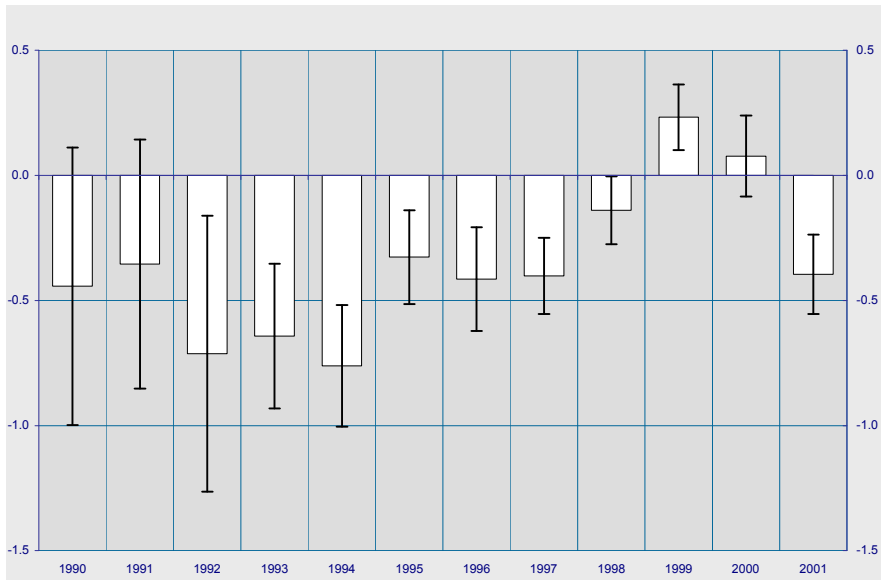
Source: Ministry of Labour & Social Affairs and Banco de España.

Effect of company-level bargaining in large firms

Source: Ministry of Labour & Social Affairs and Banco de España.

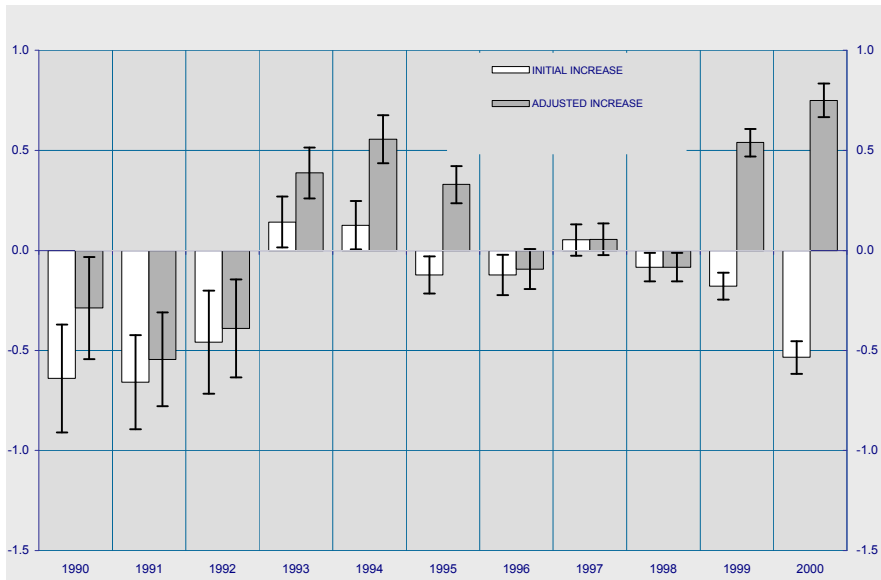
Wage moderation in public-sector firms

Source: Ministry of Labour & Social Affairs and Banco de España.

Effect of bargaining at national industry level

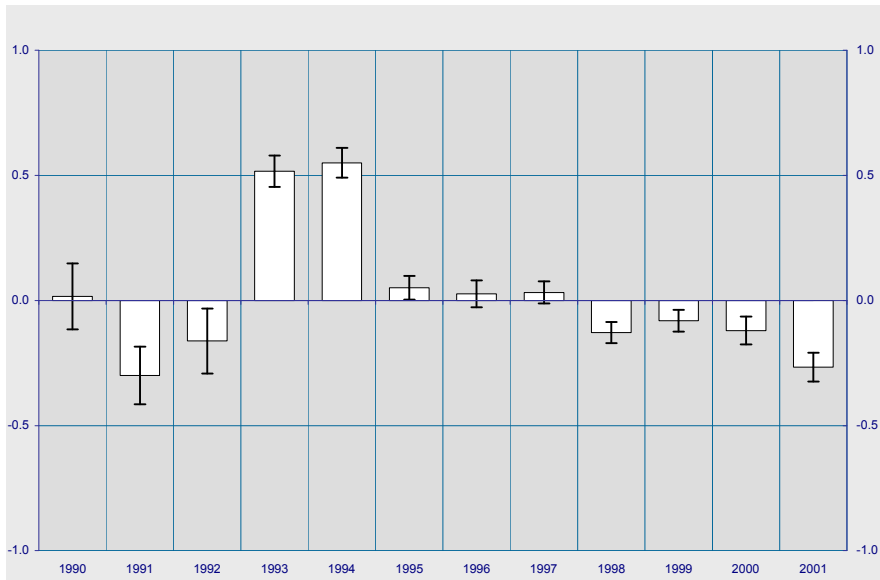
Source: Ministry of Labour & Social Affairs and Banco de España.

Effect of inflation adjustment clauses



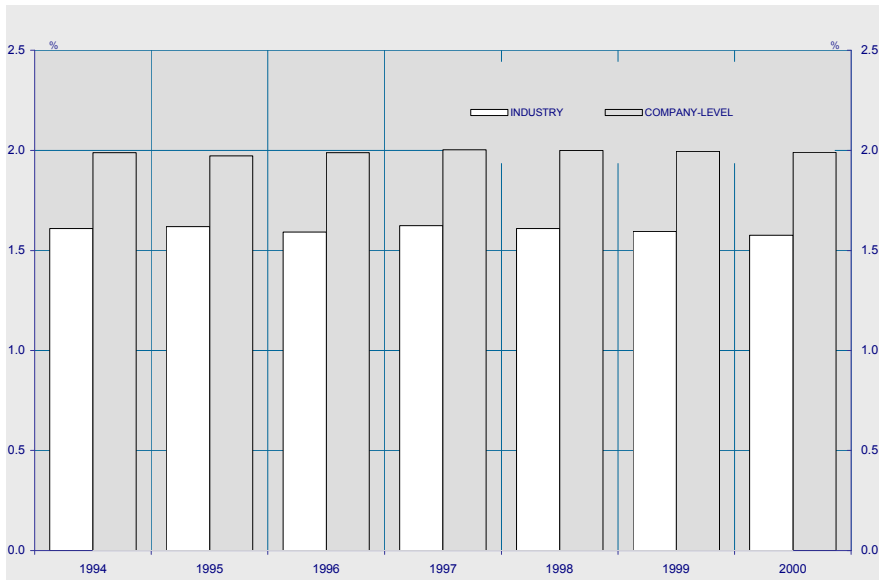
Source: Ministry of Labour & Social Affairs and Banco de España.

Effect of multi-year agreements



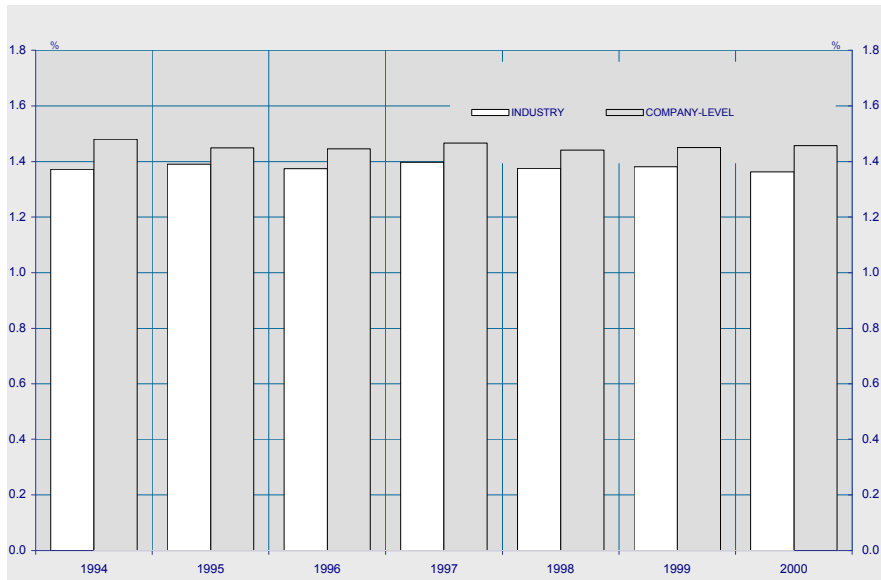
Source: Ministry of Labour & Social Affairs and Banco de España.

Ratio of total compensation of university graduates to that of manual workers by bargaining level



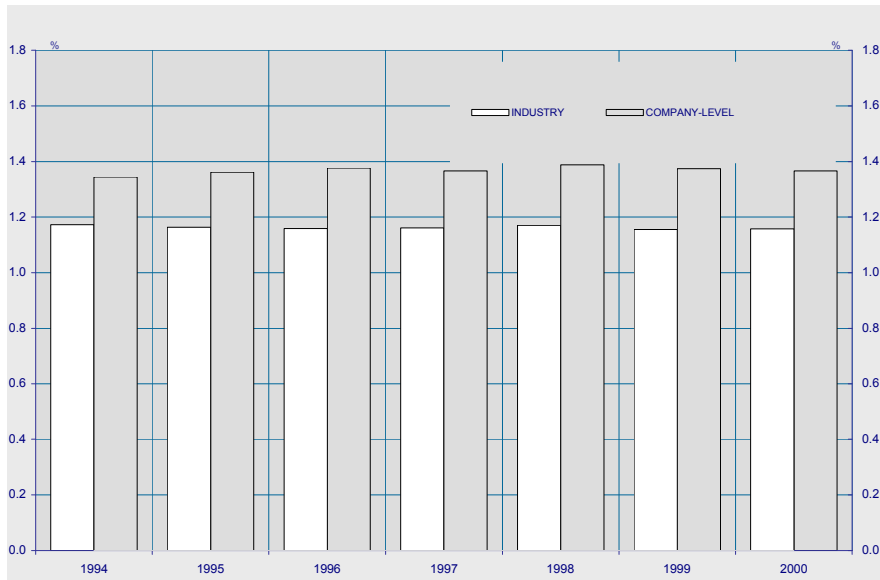
Source: Ministry of Labour & Social Affairs and Banco de España.

Ratio of total compensation of university graduates to that of administrative officers by bargaining level



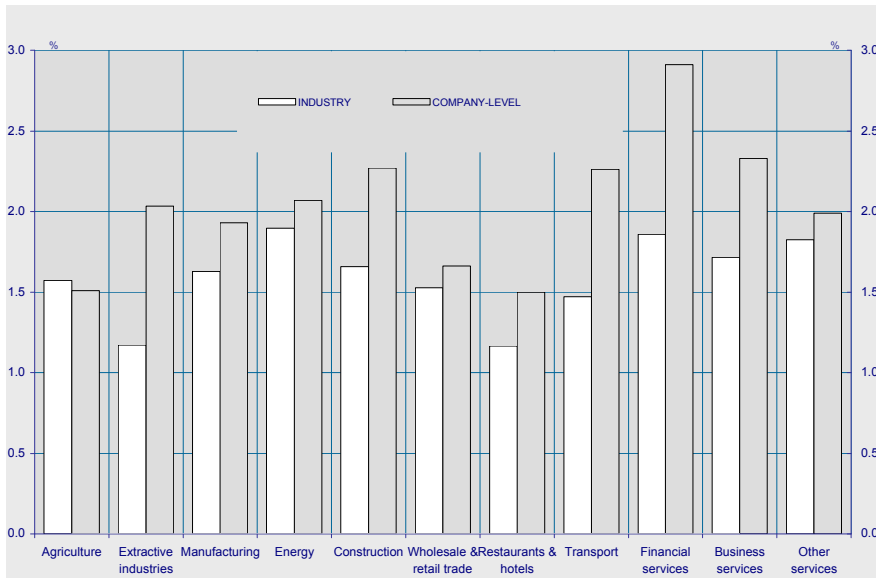
Source: Ministry of Labour & Social Affairs and Banco de España.

Ratio of total compensation of administrative officers to that of manual workers by bargaining level



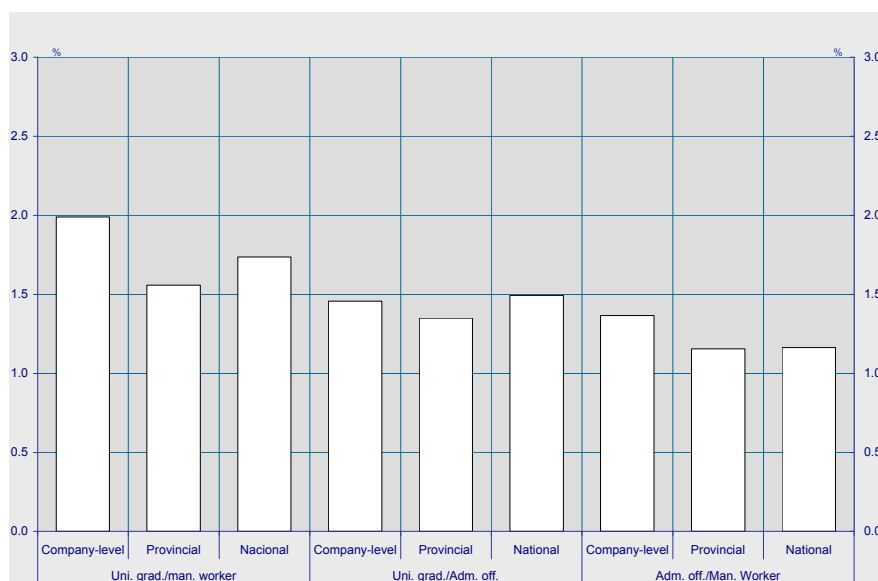
Source: Ministry of Labour & Social Affairs and Banco de España.

Ratio of total compensation of university graduate to that of manual worker by bargaining level and industry in 2000



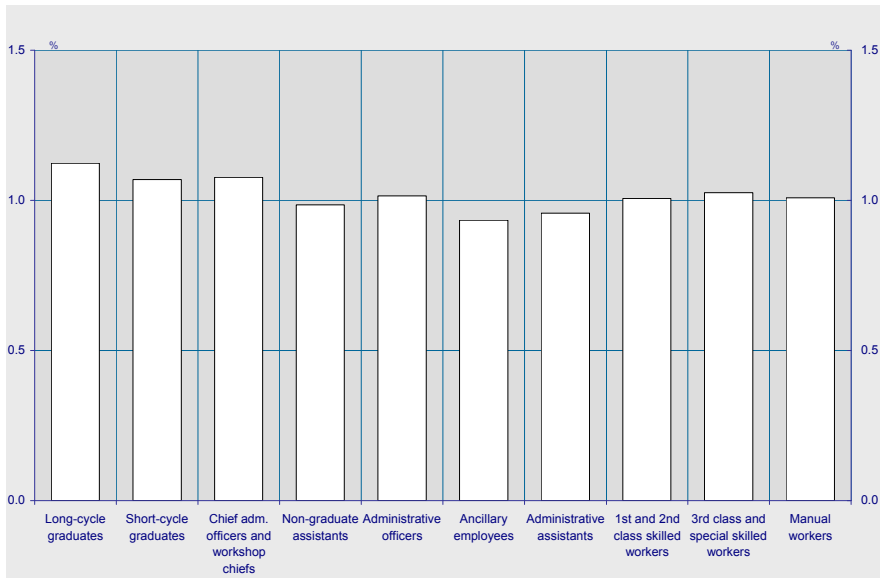
Source: Ministry of Labour & Social Affairs and Banco de España.

Total compensation ratio by worker category and bargaining level in 2000



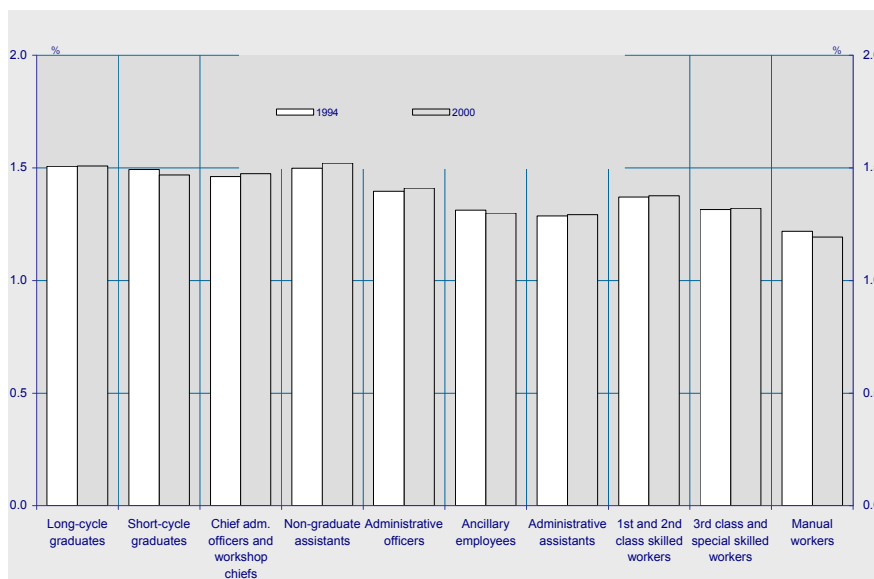
Source: Ministry of Labour & Social Affairs and Banco de España.

Total compensation ratio in national industry agreements to that in provincial industry agreements by job category



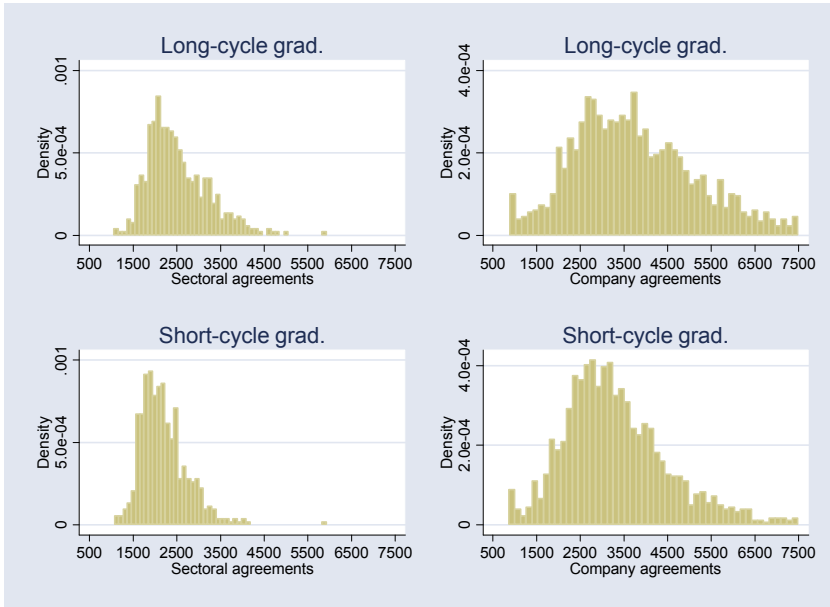
Source: Ministry of Labour & Social Affairs and Banco de España.

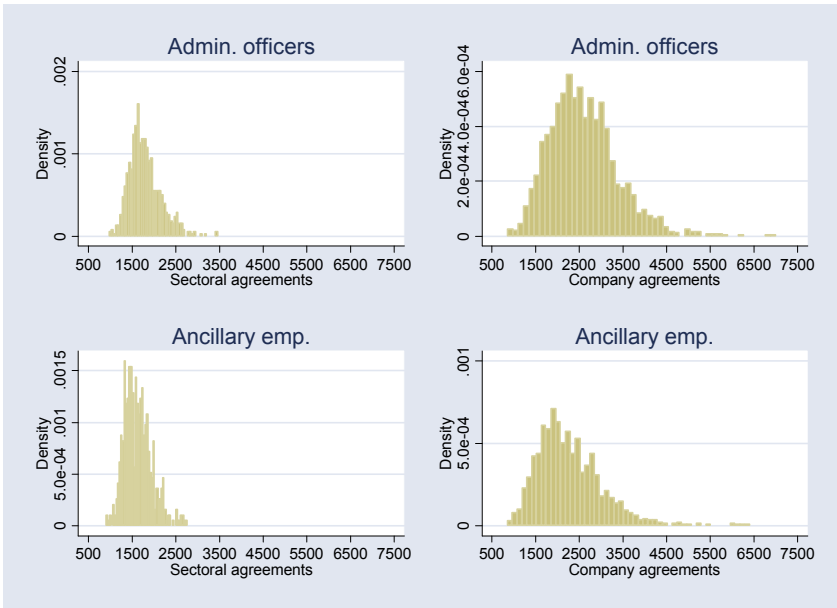
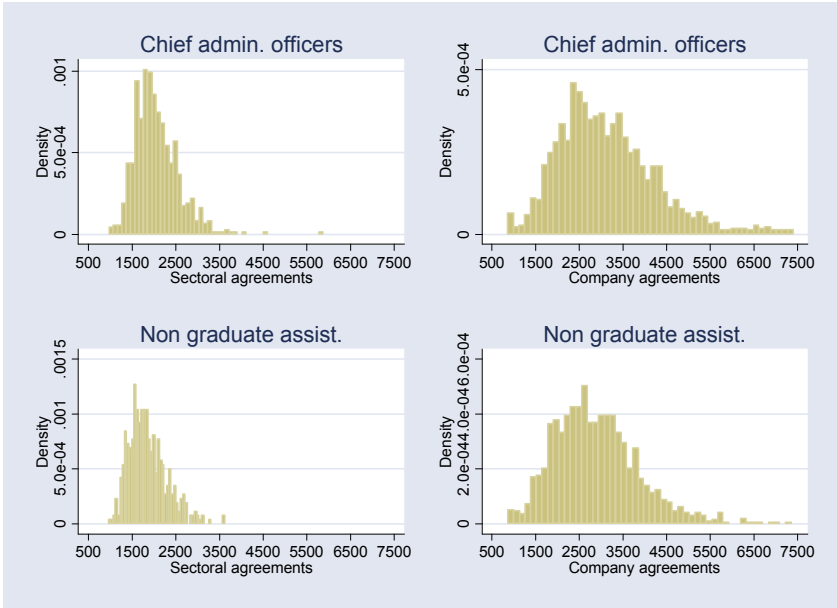
Ratio of total compensation established at company level to that at industry level by job category

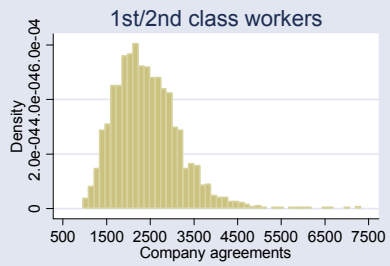
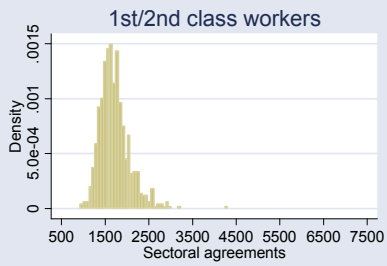
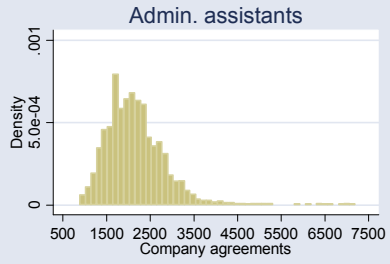
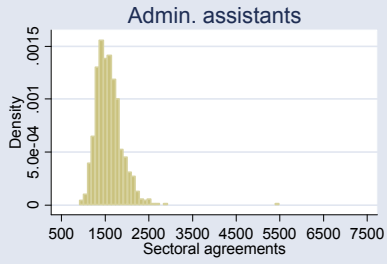


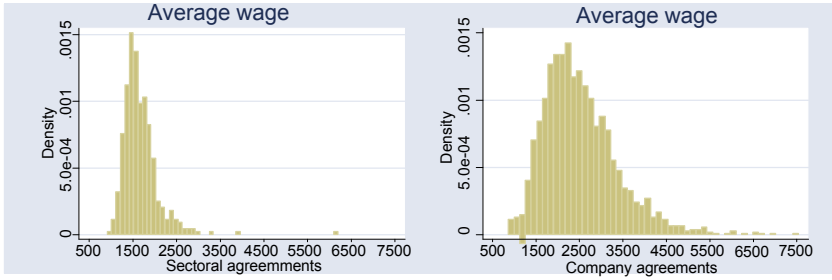
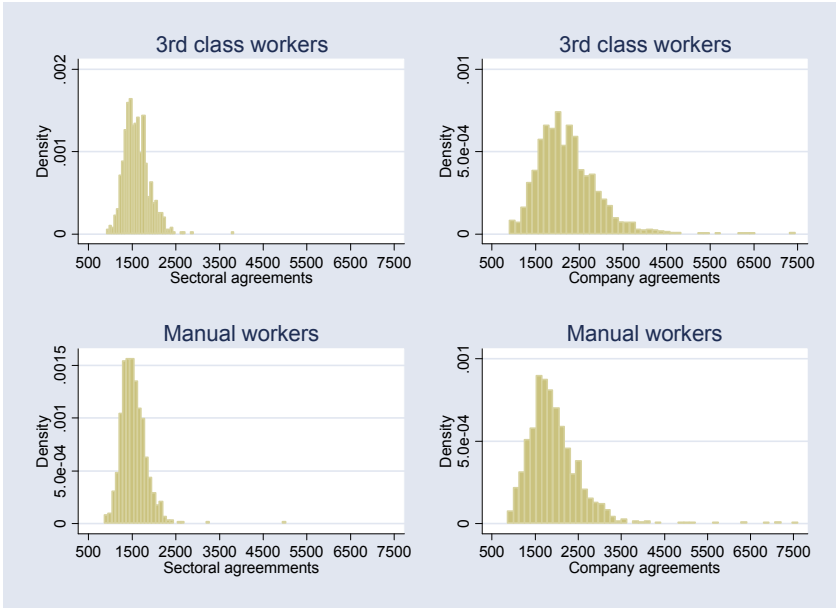
Source: Ministry of Labour & Social Affairs and Banco de España.

Gráfico 15









Appendix 1: Description of data

To analyse the characteristics and results of the collective bargaining system in Spain, we use a database taken from the register kept by the Ministry of Labour and Social Security, which contains detailed information on all collective agreements signed. This information is taken from the statistical forms which the agents signing each agreement are required to complete and which summarise the agreement's main characteristics. Specifically, the database contains 58,236 observations relating to the collective agreements in force between 1990 and 2001, which affect an average of 8,135,989 workers per year. It should be noted that the information on 2001 is incomplete because there were agreements yet to be registered.

This database provides information on a wide range of the characteristics of agreements, such as the level at which they are negotiated, the date of signature, the term (i.e. the period of time that the agreement is in force), the bargaining agents, the industry, the geographical scope of application and the number of workers covered. It also has information on the outcome of bargaining, including the wage increase agreed, whether or not there are inflation-adjustment clauses, the value of the price index used as a reference, the working hours and the agreed annual holiday. In addition, the database contains the annual wage compensation per worker guaranteed by each collective agreement, with a breakdown into eleven job categories, although this information is only available since 1994.

The list of matters negotiated is completed with information on whether the agreement includes other clauses on diverse subjects. In particular, there is information on the inclusion of clauses on employment (job maintenance, conversion of permanent contract into temporary contract, etc.) and on hiring (probationary period, limits on temporary hiring, work-experience contracts, training contracts, part-time contracts, etc.), clauses on reduction of working hours, overtime, retirement, welfare benefit supplements, pension schemes, vocational training, minimum wage, restaurant services, worker transport, productivity incentives and attendance incentives. Finally, there are variables to indicate whether there were stoppages and/or demonstrations during collective bargaining, i.e. to inform of the circumstances in which bargaining took place.

Additionally, an identification variable enables each agreement to be monitored over time, i.e. it enables this database to be used as a panel, with all the associated analytical advantages that this entails.

Appendix 2: Tables

Table A1

Distribution of workers by bargaining level and industry (CNAE-93 sections) (%). 1990-1992

	Industry				Company	
	Local	Provincial	Intra-regional	Inter-regional		National
Agriculture	0.44	89.50	6.75	0.00	2.72	0.59
Extractive industries	0.00	26.64	0.00	0.00	0.00	73.36
Manufacturing	0.05	45.85	0.16	0.27	36.37	17.28
Energy	0.00	3.35	0.00	0.00	0.00	96.65
Construction	0.00	98.66	0.00	0.00	0.00	1.34
Wholesale & retail trade	0.33	68.96	3.90	0.26	19.62	6.93
Restaurants & hotels	0.00	79.27	17.55	0.00	0.00	3.19
Transport	0.30	46.75	0.00	1.47	8.69	42.80
Financial services	0.00	0.69	0.00	21.77	68.31	9.23
Business services	0.00	43.84	2.99	1.02	44.62	7.53
Other services	0.16	22.20	5.55	0.42	43.00	28.68
Total	0.14	55.18	3.06	1.15	25.42	15.06

Source: Ministry of Labour & Social Affairs and Banco de España.

Table A2

Distribution of workers by bargaining level and industry (CNAE-93 sections) (%). 1999-2001

	Industry					Company
	Local	Provincial	Intra-regional	Inter-regional	National	
Agriculture	0.27	88.37	8.95	0.00	1.86	0.56
Extractive industries	0.13	34.23	3.67	0.00	1.93	60.04
Manufacturing	0.05	45.15	0.43	0.07	40.11	14.19
Energy	0.00	9.05	1.22	0.00	0.00	89.72
Construction	0.00	99.23	0.00	0.00	0.00	0.77
Wholesale & retail trade	0.37	64.28	8.39	0.00	21.18	5.78
Restaurants & hotels	0.00	78.03	19.40	0.00	0.00	2.57
Transport	0.12	45.29	0.81	0.00	10.40	43.36
Financial services	0.00	0.27	0.00	0.00	92.66	7.07
Business services	0.00	30.36	32.56	0.12	32.64	4.32
Other services	0.38	16.10	9.20	0.00	44.21	30.11
Total	0.14	53.34	7.61	0.03	27.09	11.79

Source: Ministry of Labour & Social Affairs and Banco de España.

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