

Inter-Industry Wage Differentials and the Bargaining Regime in a Corporatist Country : Belgium*

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Abstract :

This paper analyses the impact of the bargaining regime on inter-industry wage differentials in Belgium. Empirical findings, based upon the 1995 *Structure of Earnings Survey*, emphasise that sectors offering high/low wages are similar for workers covered by different bargaining regimes, even when controlling for individual characteristics, working conditions and firm size. Moreover, results show that *ceteris paribus* : (i) the dispersion of inter-industry wage differentials is higher when wages are collectively renegotiated at the firm level, (ii) workers covered by a company collective agreement earn 5.1% more than their opposite numbers whose wages are solely covered by national/sectoral collective agreements.

Keywords: Bargaining regime, inter-industry wage differentials, union wage gap.
JEL-Code: J31; J51

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1. INTRODUCTION

The empirical debate about the causes of earnings inequalities was reopened at the end of the 1980s by an article by Krueger and Summers (1988). The authors highlighted the fact that the structure of wages in the USA was not compatible with the neo-classical model, according to which wage differentials in equilibrium are explained either through differences in the quality of the labour force – measured in terms of productive capacity – or by so-called compensating differences¹. In other words, they showed that wage disparities persisted between agents with identical *observed* individual characteristics and working conditions, employed in different sectors. Since then, similar results have been obtained for numerous industrialised countries (Araï et al., 1996; Ferro-Luzzi, 1994; Hartog et al., 1997; Lucifora, 1993; Vainiomäki and Laaksonen, 1995). Accordingly, the existence of sectoral effects has become a stylised fact in the economic literature. There is, moreover, general agreement on the fact that these effects are persistent, strongly correlated between countries (Helwege, 1992) and on a variable scale among the industrialised countries.

Certain studies (Edin and Zetterberg, 1992; Hartog et al., 1997; Teulings and Hartog, 1998; Zweimüller and Barth, 1994) suggest in addition that the sectoral effects are significantly weaker in strongly corporatist countries. The concept of corporatism, borrowed from political science, resembles the level of centralisation of collective bargaining as well as the degree of co-ordination between the social partners. However, as this concept has not been defined in one single way, there are differences in opinion as to the relative position of the industrialised countries on the scale of corporatism². The Scandinavian countries and Austria are nevertheless always in the category of strongly corporatist countries, whereas the USA and Canada are invariably at the bottom of the ranking.

¹ According to the standard neo-classical model, where the equilibrium wage is determined through marginal labour productivity, two agents with identical productive characteristics necessarily receive the same wages. However, so-called compensating differences may occur between similar individuals placed in different working conditions. The disutility undergone by one individual following the performance of a task in an unfavourable situation may lead to wage compensation.

² For a comparison of these classifications, see OECD (1997).

Various reasons may explain these inter-industry wage differentials. They may, of course, reflect the fact that the non-observed individual characteristics of the employees are not distributed randomly among industries. In this case, the most well paid sectors would simply be those in which the non-observed quality of the labour force is the highest. However, they may equally stem from the specific characteristics of the employers in each sector. Gibbons and Katz (1992) support the existence of significant sectoral effects on workers' wages. Their study, relating to the USA, in fact indicates that workers changing industry claw back a significant part of the inter-industry wage differential after their move. Conversely, Goux and Maurin (1999) and Abowd et al. (1999) show that in the case of France, the non-observed productive capacities of workers account for a substantial part of the inter-industry wage differentials. In sum, there is no consensus regarding the exact scale of the inter-industry wage differentials. However, their existence highlights the influence of the characteristics of the employers in each sector on workers' wages.

Economic theories supporting the existence of an effect of the employers' characteristics on wages have proliferated over recent years (e.g. efficiency wage theory, insider-outsider theory). They provide a very interesting framework for analysis for anyone trying to gain an understanding of why, in equilibrium, two agents with identical productive characteristics, placed in the same working conditions, may be paid differently. Among these, the rent-sharing theory suggests that because of their bargaining power, unions can obtain a wage differential for their members which is greater than the competitive level. According to this theory, inter-industry wage disparities would therefore result in part from the heterogeneity of the bargaining power of the unions in the various industries.

Empirical studies confirm the hypothesis that unions have a significant and positive influence on the level of wages. Indeed, the wage gap between establishments which are unionised, in other words which have a collective labour agreement, and non-unionised establishments amounts to some 15% in the USA (Booth, 1995; Pencavel, 1991) and over 20% in Canada (Robinson, 1989; Robinson and Tomes, 1984). The results for the European countries, although fragmentary and not having exactly the same meaning, also tend in the same direction. Andrews et al. (1998) report a union wage gap of between 8 and 12% in the UK, while Dell'Aringa and Lucifora (1994), for their part, suggest a wage gap of 4.4% in the case of unskilled workers and 7.5% for skilled workers in the metal-mechanical industry in Italy. Finally, in the case of Germany, Austria, Norway and the Netherlands, the wage gap lies at

between 4 and 8% (Barth et al., 1994; Blanchflower and Freeman, 1992; Hartog et al., 1997). Results regarding the influence of the unions on the dispersion of wages are less numerous. However, an increasing literature in the case of the Anglo-Saxon countries shows that the unions are significantly reducing inter-industry and inter-/intra-establishment wage disparities (Fortin and Lemieux, 1997; Freeman, 1980, 1982; Gosling and Machin, 1995; Hirsch, 1982; Metcalf, 1982; Stewart, 1991).

Our contribution seeks to extend this literature in the case of the Belgian private sector on the basis of the 1995 *Structure of Earnings Survey*. This database, which has never been used before, contains a wealth of information on both the characteristics of the establishments and those of the individuals working therein.

The major reasons why we have chosen to study the Belgian private sector are the following :

- The current understanding of the structure of wages and more particularly inter-industry wage differentials in Belgium is very limited. Such an analysis in fact requires a major worker-firm matched database which has not been available until now.
- The results as to the influence of the bargaining regimes on inter-industry wage disparities and on wage levels in the countries of continental Europe are fragmentary. In addition, they are non-existent in the case of Belgium.

This paper is subdivided into two parts. First, we attempt to answer the following questions:

- Can we observe inter-industry wage differentials in Belgium ?
- What is their magnitude, and where do they come from ? Can they be explained exclusively by the sectoral heterogeneity of the workers and their working conditions, or do they also derive from the specific features of the employers in each sector ?
- Do they support the hypothesis that the dispersion of inter-industry wage differentials is significantly lower in corporatist countries and what does it imply ?

In the second part of our study, we assess the effect of the bargaining regime on the structure of wages *within* the Belgian private sector. Unlike in the USA or Canada, the distinction between unionised and non-unionised sectors has no meaning in Belgium. The point is that virtually all workers are covered by a collective labour agreement. The bargaining regime is therefore reflected more in terms of the level of wage negotiation. We distinguish primarily between two types of establishments : (i) those covered only by national and/or sectoral

collective agreements, and (ii) those in which wages are (re)negotiated collectively in house.

We then explore the following questions :

- Can we observe inter-industry wage differentials for every bargaining regime ?
- Are the sectors offering high/low wages similar in the case of workers covered by different bargaining regimes ?
- Is the dispersion in inter-industry wage differentials higher when wages are covered by a company collective agreement ?
- What is the wage gap between workers covered by different bargaining regimes and what is behind it ?

2. DESCRIPTION OF THE DATABASE

The present study is based upon the 1995 *Structure of Earnings Survey*, carried out by the *Statistics Belgium*. This survey was conducted using a representative sample of 145,107 individuals working for 6,015 establishments. It covers the Belgian establishments employing at least ten workers and whose economic activities fall within sections C to K of the Nace nomenclature³. This corresponds to approximately 1.5 million workers. The survey contains a wealth of information, provided by the management of the establishments, both on the characteristics of the latter (sector of activity, region, size of the establishment, level of wage bargaining, etc.) and on the individuals working there (gender, age, experience, seniority, education, wages, number of working hours paid, occupation, etc.). The simultaneous use of data relating to wages and levels of education nevertheless reduces the size of the sample to 81,562 units. After the exclusion of individuals for whom one of the variables used entailed a missing or incorrect observation, the number of individuals in the sample falls by approximately 2.1% to 79,835 units. Finally, the exclusive selection of establishments which are at least 50% owned by the private sector brings the definitive sample to 67,023 individuals. This selection is justified by the fact that the wages are determined in very different ways in the public and private sectors. Taking into account establishments where economic and financial control is primarily in public hands would in fact be liable to skew our results.

³ The following sectors are therefore not part of the sample : (i) agriculture, hunting and forestry; (ii) fisheries, (iii) public administration, (iv) education, (v) health and social action, (vi) collective, social and personal services, (vii) domestic services, and (viii) extra-territorial bodies.

3. WAGE EQUATIONS

In the perfect competition model, where the equilibrium wage is determined by marginal labour productivity, two agents with identical productive characteristics, placed in similar working conditions, necessarily receive the same wages. This model assumes that in equilibrium : (i) the individual characteristics of the agents as well as their working conditions explain a substantial part of the variability in individual wages, and (ii) workers' wages are independent of the specific features of their employers.

Therefore, in order to test the validity of this model, we have chosen initially to estimate various versions of a Mincer wage equation (1974). Our objective lies primarily in studying the evolution of the adjusted determination coefficient as the number of explanatory variables increases. We also discuss the major lessons of these wage equations.

The general specification of the equation which we have estimated, in a semi-logarithmic form, is as follows :

$$\ln w_i = \mathbf{a} + \sum_{j=1}^J \mathbf{b}_j X_{j,i} + \sum_{k=1}^K \mathbf{y}_k Y_{k,i} + \sum_{l=1}^L \mathbf{d}_l Z_{l,i} + \mathbf{e}_i \quad (1)$$

where w_i represents the gross hourly wage of the individual i ($i=1, \dots, N$); X is the vector of the individual characteristics of the workers and their working conditions (level of education, prior experience, seniority within the company, sex, number of hours paid, a dummy for extra paid hours, occupation, region where the establishment is located, type of contract, an indicator showing whether the individual is paid a bonus for shift work, night-time and/or weekend work and a dichotomic variable indicating whether the individual supervises other workers); Y comprises dummy variables relating to the sectoral affiliation of the individuals (nomenclature with 9, 43 and 174 branches); Z contains the characteristics of the employer (the size of the establishment and the level of wage bargaining); α is the constant; β , ψ and δ are the parameters to be estimated and \mathbf{e}_i is an error term. For more details regarding these variables, see Appendix 1. The various versions of this wage equation have been estimated by applying ordinary least squares to the weighted sample.

Table 1 : Evolution of the Adjusted Determination Coefficient

Variables included in the wage equation :		R ² adjusted
X	Level of education; prior experience, its square and its cube; seniority and its square ¹	0.464
	Type of occupation; sex; region and supervision ²	0.634
	Number of hours paid, type of contract, indicators for bonuses and overtime paid	0.649
Y	Indicators of the worker's sectoral affiliation (174 categories)	0.703
Z	Size of the establishment and level of wage bargaining	0.713

¹ A dummy variable equal to 1 if the individual has no seniority is also included in the regression.

² Variable indicating whether the individual supervises the work of his co-workers.

As Table 1 shows, the human capital variables – in other words, 6 indicators showing degree level, prior experience and its square, seniority in the firm, its square and its cube, and a dummy variable equal to 1 if the individual has no seniority in the company – account for almost 47% of the total variance in individual wages. The inclusion of other individual characteristics – 22 indicators of the occupation of workers, 2 indicators of the region in which the establishment is located, a dummy variable relating to gender and a variable to indicate whether the individual supervises the work of his co-workers – pushes the adjusted determination coefficient beyond 63%. Finally, the introduction of the number of hours paid, of 3 indicators relating to the type of contract, a dichotomic variable indicating whether the individual has received a bonus for shift work, night work or weekend work and an indicator showing overtime paid, brings the explained variance in individual wages to almost 65%. This result seems to be at odds with the neo-classical model. The point is that a substantial part of the variability of individual wages remains unexplained in spite of the taking into account of vector *X*.

Naturally, this observation might result from the fact that :

- certain individual characteristics likely to influence the productivity of the workers do not appear in our database;
- the working conditions are not taken into account perfectly.

Nevertheless, serious doubts may be expressed as to the hypothesis that the wages result simply from the effects of supply. Indeed, contrary to the predictions of the standard neo-classical model, we note (see Table 1) that the sectoral dummies (*Y*) and the characteristics of the firms (*Z*) substantially increase the explained variance in individual wages. To sum up,

our results suggest, in line with the recent theories of the labour market, that the demand side exercises a significant influence on workers' wages.

Table 2 : Wage Equation

Explanatory variables ¹	Coefficients	t-stat	Wage ²	Variation ³
Constant (reference)	5.524**	1434.89	251	0.0
<i>Education</i>				
Primary or no degree (0-6 years)	Reference			
Lower secondary (9 years)	0.053**	70.09	265	5.4
General upper secondary (12 years)	0.140**	159.21	289	15.0
Technical/Artistic/Prof. upper secondary (12 years)	0.128**	156.76	285	13.7
Higher non-university short type, higher artistic training (14 years)	0.221**	219.79	313	24.7
University and non-university higher education, long type (16 years)	0.383**	324.12	368	46.7
Post-graduate (17 years or more)	0.510**	176.45	418	66.5
<i>Prior experience</i>				
Simple	0.016**	118.87		
Squared/10 ²	-0.036**	-40.48		
Cubed/10 ⁴	0.022**	13.31		
<i>Seniority in the company</i>				
Simple	0.016**	220.70		
Squared/10 ²	-0.017**	-71.06		
<i>Sex</i>				
Male	Reference			
Female	-0.116**	-227.73	224	-11.0
<i>Supervises the work of his or her co-workers</i>				
No	Reference			
Yes	0.110**	177.14	280	11.6
<i>Hours</i>				
Ln of the number of hours paid, including overtime paid	0.000	-0.65	251	0.0
<i>Bonus for shift work, night work and/or weekend work</i>				
No	Reference			
Yes	0.057**	87.39	266	5.9
<i>Overtime paid</i>				
No	Reference			
Yes	0.024**	30.61	257	2.4
<i>Contract</i>				
Unlimited-term employment contract	Reference			
Limited-term employment contract	-0.025**	-19.10	245	-2.5
Apprentice/Trainee contract	-0.636**	-124.12	133	-47.1
Other employment contract	-0.024**	-8.48	245	-2.4
R ² adjusted	0.713			
F-test	11792.23**			
Number of observations	67,023			

Notes : * $p < 0.05$, ** $p < 0.01$. 173 indicators of sectoral affiliation, 22 indicators relating to the type of occupation, an indicator showing the individuals without any seniority in the company, 2 indicators of the region in which the establishment is located, the Napierian logarithm of the size of the company and 2 indicators of the level of wage bargaining have also been included in the regression. For more details, see Appendix 2.

¹ The variable explained is the Napierian logarithm of the gross hourly wage in BEF.

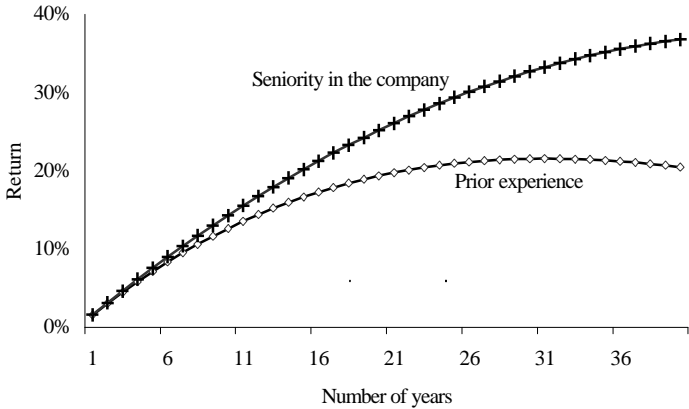
² Gross hourly wage in BEF.

³ Variation in % with regard to the reference. Technically, it is obtained by the antilog (to base e) of the estimated dummy coefficient from which 1 is subtracted (x 100). For more details see Gujarati (1995: 525).

Before embarking upon the analysis relating to the effects of demand on wages, various lessons can be drawn from the wage equation (see Table 2) :

- Firstly, in line with the human capital theory, we note that the level of education exercises a significant and positive influence upon wages. The point is that compared to someone with a primary education qualification (or no degree), the wage differential is 15% for someone with a general upper secondary education, 24.7% for someone qualified on a short non-university higher education course, 46.7% for someone with a long non-university or university higher education and 66.5% for an individual who has obtained a postgraduate degree.

Figure 1 : Return of Experience and Seniority



Note : The return measures the wage differential compared to the reference category whose gross hourly wage is 251 BEF.

- Moreover, in agreement with the literature, we see a concave relation between the wages and the prior experience of a worker on the labour market⁴. Initially, the return on an additional year of experience is approximately 1.6%; however, it decreases progressively and becomes negative after 32 years of experience. All other things being equal, an individual with 31 years of experience obtains a wage differential of 21.6% compared to the reference worker whose gross hourly wage is 251 BEF (see Figure 1). The hypothesis of a bell-shaped relationship between wages and experience rests upon the idea that the investment in human capital (specific training and accumulation by work) diminishes over

⁴ The introduction of the experience in the form of an order three polynomial rests upon the results of Murphy and Welch (1990).

time and that the stock of human capital suffers from some degree of obsolescence. The growing share of the relationship between wages and prior experience is explained essentially by the evolution in individual productivity and partly by scale increases.

- The relationship between wages and seniority in the company is also in the form of a bell. However, the return on seniority decreases markedly less quickly than that on experience (see Figure 1). This difference can be explained through the almost automatic increase in wages as a function of years of seniority (essentially for white collar-workers) and through the progression in the earnings classification (i.e. promotion by seniority). It also illustrates the fact that companies offer more rewards for the human capital specific to their working environment. Finally, these results support the ‘turnover’ version of the efficiency wage theory (Stiglitz, 1974) according to which companies grant a bonus to workers who are faithful to them.
- The dummy variable relating to gender suggests that all other things being equal, women are paid wages which are 11% lower than those of men. However, this result is not correct, for it implies that the individual characteristics of men and women are being remunerated in an equivalent way. Oaxaca (1973) and Blinder (1973) have developed a method which allows the returns of the characteristics of men and women to vary. It is a decomposition procedure which consists basically in estimating separate wage equations for men and women and to compute the wage differential that derives from differences in endowments (explained share of the gap) and the wage differential resulting from differences in the returns of the various characteristics (unexplained share of the gap, i.e. discrimination)⁵. Table 3 sets out the results of the Oaxaca-Blinder decomposition. They show that the gender wage gap stands at 28.3%. Approximately 50% of this wage gap results from different endowments (i.e. individual characteristics, working conditions, sectoral affiliation, size of the establishments and level of wage bargaining). In other words, there is a 14.1% gender wage gap which remains unexplained and which might be attributed to discrimination.

⁵ For more details on the Oaxaca-Blinder decomposition method, see section 5.4.

Table 3 : Decomposition of the Gender Wage Gap

Overall ¹	Explained	Unexplained
28.3%	14.2%	14.1%
(100)	(50.1)	(49.9)

Notes : ¹ Gender wage gap as a percentage of the average wage for women, i.e. $(W_m - W_w)/W_w$ where W_m and W_w stand respectively for the average wage of men and women in BEF.

These results are based on separate regressions for men and women which include the same explanatory variables as in Table 2 (except the gender dummy).

We have chosen as a non discriminatory wage structure that of men. This choice is based on the fact that : (i) men are the largest group in the work force and (ii) the law on “equal pay for equal work” implicitly considers men’s wages as a norm.

- We likewise observe a wage differential of 11.6 % in favour of individuals supervising the work of their co-workers. This result stems from the fact that all other things being equal, these individuals have a higher degree of responsibility within the company. It likewise backs up the ‘effort’ version of the efficiency wage theory (Shapiro and Stiglitz, 1984). According to the latter, it is optimal for a company to offer a bonus to employees whose effort it is not able to monitor constantly, and to carry out intermittent checks with respect to them, including dismissal in the event of insufficient effort. To sum up, these results suggest the existence of a positive relationship between the wage of an individual and his degree of autonomy at work. Notice that such a relationship has also been observed in other countries (Arai, 1994; Groshen and Krueger, 1990).
- Table 2 reveals, finally, that the number of hours worked does not significantly influence the gross hourly wage⁶. Having said that, the fact of putting in extra paid hours or being paid a bonus for non-typical working hours (shift work, night work and/or weekend work) leads to an increase in hourly wages of 2.4% and 5.9% respectively compared to the

⁶ The regression coefficients relative to the number of hours paid and over-time hours should be interpreted with caution. This is due to a potential endogeneity bias. Indeed, even if employees can not always freely choose their working hours, the assumption of exogenous hours is too restrictive. To put it differently, the labour supply decision might depend on the potential market wage rate. An easy way to account for this potential bias is to use instrumental variables representing the expected working hours of each employee. Following Wolf (2000), it is extremely difficult to find appropriate instruments. Nonetheless, it has been conventional to use variables describing the household context, such as the number of small children, the marital status and the other household income. Unfortunately, these instruments are not reported in the *Structure of Earnings Survey*. This is why controlling for the endogeneity of working hours appears to be a very difficult task. However, this should not be a major limitation for our analysis. Findings show indeed that the inclusion of the number of working hours and a dummy for over-time paid in the wage equation does not affect the significance nor the magnitude of the other regression coefficients reported in Table 2 and Appendix 2.

reference category. Let us also note that the wages of those employed on a limited-term employment contract are 2.5% lower than those of their opposite numbers with an unlimited-term contract. The proposal put forward by Harris and Holmström (1982), described above, makes it possible to interpret this coefficient.

Globally speaking, our results are in agreement with the economic theory : most of the regression coefficients are significant and they have the expected sign (see Appendix 2 for a complete description of the results). However, our estimates might be slightly biased because of the fact that our sample is censored. In fact it does not contain any information on the number of unemployed people or on their characteristics. Docquier et al. (1999), Laurent (2000) and Jepsen (2001) have studied this problem in the case of Belgium. Their results obtained using the PSBH (Panel Survey on Belgian Households) suggest that the expected level of earning is not significantly tied to the fact of having a job. The assessment of a censored sample therefore would not lead to a significant selection bias in Belgium. Although this result might derive from the low percentage of unemployed people included in their samples, it does tend to back up our estimates.

4. INTER-INDUSTRY WAGE DIFFERENTIALS

The analysis of the estimated wage equations suggests that in addition to the productive characteristics of the workers and their working conditions, other factors might contribute to the variance in individual wages. So wages would not derive simply from the effects of supply, but would also depend upon demand. In this section, we test this proposal in a more rigorous way. To do this, we look into the existence and scale of inter-industry wage differentials in the Belgian private sector. In other words, we analyse whether wage disparities may be observed between people employed in different sectors of activity, similar from the point of view of their productive characteristics and their working conditions. Our methodology, which is consistent with that of Krueger and Summers (1988), is described below. Notice, however, that the interpretation of the results is slightly different.

4.1. METHODOLOGY

The evaluation of the inter-industry wage differentials rests upon the estimation of a wage equation identical to the one described in the previous section (see equation (1)). Initially, we include only the constant and the sectoral dummies (Y) according to the nomenclature with 9, 43 or 174 branches. The coefficients estimated, $\hat{\mathbf{a}}$ and \hat{y}_k ($k = 1, \dots, K$), are used to identify the following respectively :

- the wage of the average worker in the reference sector,
- the wage differential between the average worker in sector k and the average worker in the reference sector.

The wage of the average worker in sector k (i.e. \hat{w}_k) is therefore obtained by adding $\hat{\mathbf{a}}$ and \hat{y}_k . In addition, the wage of the average worker in the economy (i.e. \mathbf{w}) corresponds to the average of the wages of the average workers in all sectors (i.e. \hat{w}_k , for $k=1, \dots, K+1$), weighted by the sectoral employment shares (i.e. \bar{p}_k). In other words :

$$\mathbf{w} = \sum_{k=1}^{K+1} \bar{p}_k \hat{w}_k \quad (2)$$

$$\left\{ \begin{array}{l} \hat{w}_{K+1} = \hat{\mathbf{a}} \\ \bar{p}_k = \frac{1}{N} \sum_{i=1}^N p_{k,i} \quad (k = 1, \dots, K+1). \end{array} \right.$$

Accordingly, the wage differential between the average worker in sector k and the average worker in the economy may be expressed as follows :

$$d_k = \hat{w}_k - \mathbf{w} \quad (k = 1, \dots, K+1) \quad (3)$$

This is the *gross* inter-industry wage differential : d_k does not take account of the sectoral heterogeneity of productive capacities, working conditions or characteristics of the companies. That is why we have also estimated some ‘enlarged’ wage equations. These contain other explanatory variables in addition to the constant and the sectoral dummies (Y).

We therefore obtain inter-industry wage differentials between individuals who have been made identical, for example from the point of view of their individual characteristics. However, given that the constant no longer corresponds to the wage of the average worker in the reference sector, the procedure used to estimate the d_k values is slightly different. The point is that it first of all involves calculating the average wage differential of all the sectors compared to the reference :

$$\mathbf{P} = \sum_{k=1}^K \bar{p}_k \hat{y}_k \quad (4)$$

and then applying the formulae below :

$$\begin{cases} d_k = \hat{y}_k - \mathbf{P} & (k = 1, \dots, K) \\ d_{K+1} = -\mathbf{P} \end{cases} \quad (5)$$

Moreover, we have also calculated a synthetic indicator of the dispersion of the inter-industry wage differentials. This is the standard deviation of the d_k values, adjusted for sampling error and weighted by the sectoral employment shares. In algebraic terms, the weighted adjusted standard deviation (WASD) of the d_k corresponds to the following expression :

$$WASD(d_k) = \sqrt{\sum_{k=1}^{K+1} \bar{p}_k \left(d_k - \frac{\sum_{k=1}^{K+1} d_k}{K+1} \right)^2 - \frac{\sum_{k=1}^{K+1} \text{var}(\hat{d}_k)}{K+1} + \frac{\sum_{k=1}^{K+1} \sum_{l=1}^{K+1} \text{cov}(\hat{d}_k, \hat{d}_l)}{(K+1)^2}} \quad (6)$$

4.2. EMPIRICAL RESULTS

Table 4 shows the inter-industry wage differentials as well as their dispersion for a 43-branch nomenclature⁷. Column (i) contains the *gross* wage differentials, i.e. estimated without control variables. These are significant at the level of 5%, both in individual terms (with the exception of one sector) and globally.

⁷ An identical analysis was carried out for a 174-branch nomenclature (Nace 3-digit). The results arising from this, set out in Appendix 3, support and refine our conclusions.

The best-paid sector is post and telecommunications⁸ : the average worker here earns 58.4% more than the average worker in the economy⁹. This sector is followed by the electricity, gas, steam and hot water supply sector (+48.9%); manufacture of coke, refined petroleum and nuclear fuel industries (+43.6%) and financial intermediaries, except insurance and pension funding (+36.6%). The hotel and restaurant sector is at the very bottom of the scale of wages : the average worker's wage is 30.1% lower than that of the average worker in the economy. At the bottom of the scale, we likewise find recycling (-27.3%); manufacture of wearing apparel; dressing and dyeing of fur (-25.2%), and retail trade, except of motor vehicles and motorcycles; repair of personal and household goods (-24%).

Table 4 : Inter-Industry Wage Differentials and their Dispersion in 1995

<i>Industry (NACE 2-digit)</i>	<i>Variables included in the wage equation :</i>		
	<i>(i)</i>	<i>(ii)</i>	<i>(iii)</i>
	<i>Y</i>	<i>X, Y</i>	<i>X, Y, Z</i>
Other mining and quarrying (14)	0.027	0.000	0.018
Manufacture of food products and beverages (15)	-0.080	-0.016	-0.012
Manufacture of tobacco products (16)	0.039	0.026	0.019
Manufacture of textiles (17)	-0.180	-0.066	-0.069
Manufacture of wearing apparel; dressing and dyeing of fur (18)	-0.273	-0.123	-0.109
Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear (19)	-0.236	-0.019	-0.026
Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (20)	-0.144	-0.053	-0.031
Manufacture of pulp, paper and paper products (21)	0.074	0.095	0.067
Publishing, printing and reproduction of recorded media (22)	0.093	0.085	0.095
Manufacture of coke, refined petroleum products and nuclear fuel (23)	0.379	0.207	0.193
Manufacture of chemicals and chemical products (24)	0.240	0.137	0.104
Manufacture of rubber and plastic products (25)	-0.001	-0.001	0.001

⁸ This sector represents 0.4% of our entire sample (after weighting). Approximately 87% of the individuals included in this category work in the telecommunications sector, as against only 13% in postal activities. This asymmetry derives from the fact that the national mail service is not included in our analysis. Accordingly, the wage differential associated with the post and telecommunications sector basically reflects the wage disparity recorded in the telecommunications sector (see Appendix 3, codes 641 and 642).

⁹ The d_k 's reported in Table 4 measure the differential between the log wage of the average worker in sector k and the log wage of the average worker in the economy. Hence, in order to get the difference in percentage between the wage (in BEF) of the average worker in sector k (I_k) and the wage (in BEF) of the average worker in the economy (ρ), the following expression has been computed :

$V_k = (I_k - \rho) / \rho$ for $k = 1, \dots, K+1$; where $I_k = \exp(\hat{\alpha}) [1 + (\exp(\hat{\gamma}_k) - 1)]$ for $k = 1, \dots, K$; $I_{K+1} = \exp(\hat{\alpha})$; and

$\rho = \sum_{k=1}^{K+1} \bar{p}_k I_k$. This transformation, which is surprisingly often neglected in the literature, is required

because the estimated wage equation has a semi-logarithmic form.

Manufacture of other non-metallic mineral products (26)	0.030	0.039	0.028
Manufacture of basic metals (27)	0.196	0.083	0.024
Manufacture of fabricated metal products, except machinery and equipment (28)	-0.088	-0.019	-0.004
Manufacture of machinery and equipment n.e.c. (29)	-0.006	-0.021	-0.042
Manufacture of office machinery and computers (30)	-0.223	-0.037	0.021
Manufacture of electrical machinery and apparatus n.e.c. (31)	0.011	0.032	-0.002
Manufacture of radio, television and communications equipment and apparatus (32)	0.186	0.060	0.018
Manufacture of medical, precision and optical instruments, watches and clocks (33)	0.093	0.027	0.020
Manufacture of motor vehicles, trailers and semi-trailers (34)	0.054	0.041	-0.036
Manufacture of other transport equipment (35)	0.162	0.065	0.016
Manufacture of furniture; manufacturing n.e.c. (36)	-0.169	-0.089	-0.076
Recycling (37)	-0.302	-0.089	-0.059
Electricity, gas, steam and hot water supply (40)	0.415	0.256	0.229
Construction (45)	-0.079	-0.022	0.000
Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel (50)	-0.074	-0.067	-0.031
Wholesale trade and commission trade, except of motor vehicles and motorcycles (51)	0.042	-0.030	-0.003
Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods (52)	-0.257	-0.119	-0.110
Hotels and restaurants (55)	-0.342	-0.142	-0.097
Land transport; transport via pipelines (60)	-0.200	-0.082	-0.059
Water transport (61)	0.260	0.170	0.180
Air transport (62)	0.142	0.134	0.159
Supporting and auxiliary transport activities; activities of travel agencies (63)	0.023	0.011	0.031
Post and telecommunications (64)	0.477	0.296	0.254
Financial intermediation, except insurance and pension funding (65)	0.328	0.145	0.113
Insurance and pension funding, except compulsory social security (66)	0.222	0.079	0.054
Activities auxiliary to financial intermediation (67)	0.092	-0.020	0.009
Real estate activities (70)	-0.121	-0.081	0.004
Renting of machinery and equipment without operator and of personal and household goods (71)	-0.005	-0.056	-0.035
Computer and related activities (72)	0.206	-0.005	0.006
Research and development (73)	0.314	0.073	0.057
Other businesses activities (74)	-0.035	-0.014	0.009
R ² adjusted	0.250	0.689	0.701
F-test relative to the estimated relation	8331	26966	27593
F-test relative to the sectoral dummies	8331	2921	2170
Weighted adjusted standard deviation (WASD) of the inter-industry differentials (d_k)	0.184	0.089	0.074
Number of industries	43	43	43
Number of observations in the sample	67023	67023	67023

Notes : All the estimates are significant at the level of 5%, except those in bold.

Y : sectoral dummies, X : individual characteristics and working conditions, Z : specific features of the companies.

Where do these gross wage differentials come from ? Can they be accounted for solely by the sectoral heterogeneity of the workers and their working conditions, or do they also derive from the specific features of the employers in each sector ?

Column (ii) records the inter-industry wage differentials stripped of the productive characteristics of the individuals and their working conditions. In contrast with the predictions of the perfect competition model, we note that significant wage differentials subsist between agents with identical *observed* individual characteristics and working conditions, employed in different sectors. The latter are naturally smaller than the gross wage differentials; but having said that, they are still not negligible. Indeed, compared to the average worker in the economy, the wage differentials (in BEF) still fluctuate between +38.3% in the post and telecommunications sector and -15.3% in the hotel and restaurant sector¹⁰. Therefore, the gross wage differentials do not seem to result exclusively from the sectoral heterogeneity of the characteristics of the workers and their working conditions.

Column (iii) reveals, indeed, that the inclusion of the size of the establishments and the level of wage bargaining, in addition to the individual characteristics and the working conditions, also gives rise to a reduction in sectoral wage differentials. This result suggests that the inter-industry wage differentials result to some extent from the specific features of the firms in each sector. In other words, wage determination within each sector would be influenced by the organisational and technological characteristics of the establishments making them up.

Table 5 : Correlation between the Inter-Industry Wage Differentials

Specification :	Sectoral nomenclature :		
	Nace 1 : 9 categories	Nace 2 : 43 categories	Nace 3 : 174 categories
1) $Y - X, Y$	0.972** / 0.883**	0.913** / 0.904**	0.866** / 0.859**
2) $Y - X, Y, Z$	0.952** / 0.867**	0.853** / 0.840**	0.842** / 0.824**

Notes : Pearson/Spearman correlation coefficients. * $p < 0.05$, ** $p < 0.01$. Y : sectoral dummies, X : individual characteristics and working conditions, Z : specific features of the establishments.

1) Pearson/Spearman correlation coefficients between the inter-industry wage differentials (d_k) obtained respectively from a wage equation containing (Y) and (X, Y).

2) Pearson/Spearman correlation coefficients between the inter-industry wage differentials (d_k) obtained respectively from a wage equation containing (Y) and (X, Y, Z).

¹⁰ In order to get the difference in percentage between the wage (in BEF) of the average worker in sector k and the employment-share weighted mean wage (in BEF) in the economy, the following expressions have been computed : $V_k = [(\exp(\hat{y}_k) - 1) - G]$ for $k = 1, \dots, K$ and $V_{K+1} = -G$; where $G = \sum_{k=1}^K \bar{p}_k [\exp(\hat{y}_k) - 1]$. This

transformation, often omitted in the literature, is necessary because the estimated wage equation has a semi-logarithmic form.

Table 5 shows that the hierarchy of the sectoral wage differentials is not greatly influenced by the introduction of the control variables (X and/or Z) in the wage equation. Indeed, the Pearson/Spearman correlation coefficients between the *gross* and *stripped* wage differentials – estimated in Nace 1, 2 or 3-digit – are significant at the probability level of 1% and they reach an average of 90%. Moreover, it is interesting to note that the sectoral wage structure which we have just described is similar to that observed in the other industrialised countries (see, for example, Zweimüller and Barth (1994) for a comparison with Austria, Germany, Canada, Norway, Sweden and the USA).

What about the dispersion of the inter-industry wage differentials ? Table 6 shows that the weighted adjusted standard deviation (WASD) of the wage differentials grows significantly when the number of sectors being considered increases. In addition, we note that the introduction of the individual characteristics and the working conditions (X) into the wage equation reduces the dispersion in the wage differentials by about 50%, irrespective of the sectoral nomenclature used. The inclusion of the specific features of the employers (the size of the establishment and the level of wage bargaining), in addition to the vector X , leads to a drop in the WASD in the differentials of between 16.5 and 20% (from 0.060 to 0.048 in Nace 1-digit; from 0.089 to 0.074 in Nace 2-digit and from 0.103 to 0.086 in Nace 3-digit).

Table 6 : WASD of the Inter-Industry Wage differentials – Summary

<i>Variables included in the wage equation :</i>	<i>Sectoral nomenclature :</i>		
	Nace 1 : 9 categories	Nace 2 : 43 categories	Nace 3 : 174 categories
Y	0.130	0.184	0.199
X, Y	0.060	0.089	0.103
X, Y, Z	0.048	0.074	0.086

Notes : WASD stands for weighted adjusted standard deviation of the inter-industry wage differentials.
 Y : sectoral dummies, X : individual characteristics and working conditions, Z : specific features of the companies.

To sum up, our results emphasise the existence of inter-industry wage differentials, independently of the configuration adopted. They likewise suggest that their structure is comparable to that observed in the other industrialised countries and that they result in part from the characteristics of the employers in each sector.

4.4. AN INTERNATIONAL PERSPECTIVE

As we indicated in the introduction, certain studies support the existence of a decreasing relationship between the dispersion of inter-industry wage differentials and the degree of corporatism of the country concerned. To put it another way, they suggest that the non-competitive wage disparities – in other words, those which do not derive from the heterogeneity of the individual characteristics or the working conditions – are significantly lower in strongly corporatist countries.

Do the results which we have obtained for Belgium support this hypothesis ? It is not easy to answer this question, because international comparisons with regard to inter-industry wage differentials need to be carried out with the greatest of care. The point is that the scale of the estimated wage disparities between different industries depends heavily upon the specification of the wage equation, the sectoral nomenclature used, the field covered by the data and the position of the country in the business cycle.

It is for this reason that in Table 7 we compare our results almost exclusively against those of Teulings and Hartog (1998). The latter provide, for 11 industrialised countries, comparable indicators of the dispersion of inter-industry wage differentials. Moreover, the field covered by their data, the number of sectoral categories used and the variables included in their wage equations are similar to our own¹¹. They thus provide an interesting reference framework for the evaluation of our results from an international perspective. However, we also compare our results against those of Ferro-Luzzi (1994). The latter provides comparable estimates for Switzerland.

In order to test the relation between the dispersion of inter-industry wage differentials and the characteristics of the collective bargaining arrangements, two indicators measuring the degree of corporatism of the industrialised countries have also been included in Table 7. These are the Bruno and Sachs (1985) and Calmfors and Driffill (1988) indices. The former reflects the privileged level of bargaining (national, sectoral or company) as well as the ability of the

¹¹ The general specification of their wage equation is as follows : they regress the log of the gross hourly wage on the experience, its square and its cube, tenure and its square, a dummy for zero tenure, education, the log of the number of hours worked, indicators combining family situation and gender, sectoral dummies, regional indicators and the log of the size of the company/establishment.

social partners to ensure compliance with their agreements at the lower bargaining levels (degree of vertical co-ordination), while the second measures exclusively the formal level of the bargaining. It thus does not take account of the level of co-ordination between the social partners¹².

Table 7 : Collective Bargaining and the Dispersion of Inter-Industry Wage Differentials

Country	Year	# Sectors	WASD ⁺	Degree of corporatism :	
				Calmfors & Driffill ^a	Bruno & Sachs ^b
Sweden	1981	31	0.044 ^c	14	12
Austria	1983	24	0.050 ^c	16	16
Denmark	1990	18	0.054 ^c	13	10
France	1992	36	0.058 ^c	7	5
Finland	1987	27	0.065 ^c	12	9
Netherlands	1985	42	0.066 ^c	10	14
Belgium	1995	43	0.074^d	9	8
Norway	1989	29	0.085 ^c	15	13
Germany	1988	34	0.110 ^c	11	15
Switzerland	1991	40	0.113 ^e	3	11
UK	1991	59	0.143 ^c	6	6
USA	1988	44	0.141 ^c	2	1
Canada	1982	16	0.171 ^c	1	2
Correlations between the WASD and the degree of corporatism:					
Spearman				-0.776**	-0.476
Pearson				-0.800**	-0.597*

Notes : * $p < 0.05$, ** $p < 0.01$.

⁺ : Dispersion of the inter-industry wage differentials.

^a : Reversed Calmfors and Driffill corporatism index (1988). 16 = highly corporatist country.

^b : Reversed Bruno and Sachs corporatism index (1985). 16 = highly corporatist country.

^c : Teulings and Hartog (1998).

^d : Own calculations. This result rests upon the estimation of a wage equation containing, as explanatory variables, 43 sectoral indicators and the vectors X and Z (see Table 6).

^e : Ferro-Luzzi (1994).

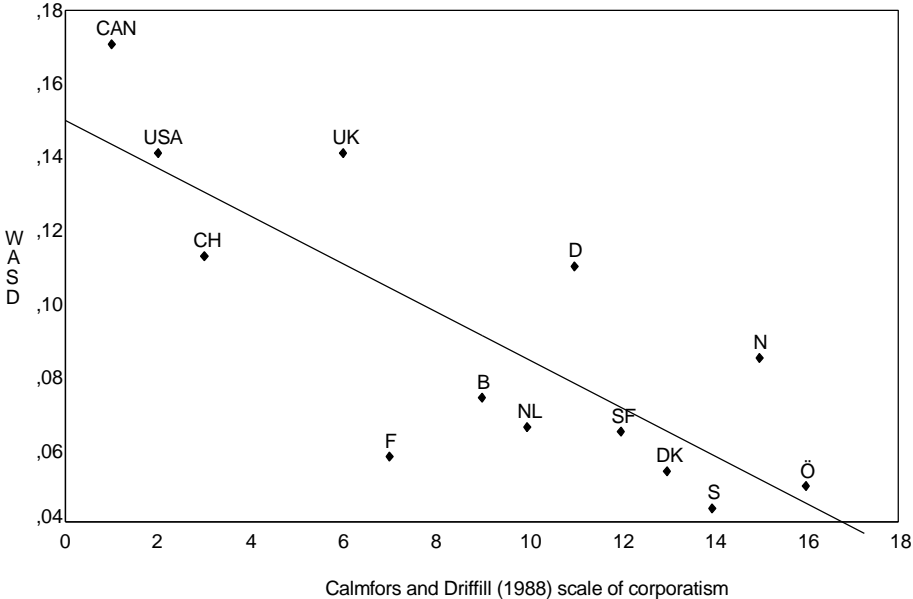
If we explore Table 7 we note that Belgium occupies a middle position among the industrialised countries with regard to the dispersion of inter-industry wage differentials. The scale of the latter is indeed lower than the figures recorded in the Anglo-Saxon countries (UK, USA and Canada), Switzerland and Germany and slightly higher than those in the Scandinavian countries (with the exception of Norway), Austria, France and the Netherlands.

Moreover, our results clearly support the existence of a decreasing relationship between the dispersion of inter-industry wage differentials and the degree of corporatism of the industrialised countries. Table 7 in fact reveals a strong negative correlation, which is

¹² For more details, see OECD (1997).

significant at the level of probability 1%, between the dispersion of the inter-industry wage differentials and the Calmfors and Driffill indicator (see Figure 2). The correlation with the Bruno and Sachs indicator, on the other hand, is less intense. This result suggests that when it comes to wage dispersion, the influence of the formal level of bargaining is greater than that of the degree of co-ordination of the social partners.

Figure 2 : Degree of Corporatism and the Dispersion of Inter-Industry Wage Differentials



Note : WASD indicates the dispersion of the inter-industry wage differentials.

How are we to interpret these results ? The wage disparities observed between sectors militate in favour of the efficiency wage theory. Indeed, the latter demonstrate that if the effort incentive conditions vary from one sector to another, two individuals with identical individual characteristics, placed in the same working conditions, are likely to earn different wages. For example, according to the ‘effort’ version of the efficiency wage theory, big companies would find it to be in their interests to offer relatively higher wages to their employees because they face higher costs in order to monitor the effort of the latter. However, this theory does not explain why the non-competitive wage inequalities are higher in the non-corporatist countries. The constraints encouraging companies to pay *efficient* wages, i.e. wages above the competitive level, actually seem to be similar among the industrialised countries.

The justification put forward by Holmlund and Zetterberg (1991), based upon the rent-sharing theory, is more compelling. They showed that the influence of the sectoral conditions

(variations in prices and productivity) on wages is strong in the USA, moderate in Germany and low in the Scandinavian countries. The elasticity between the sectoral environment and wages would thus be more pronounced in the non-corporatist countries. To put it another way, the determination of wages would depend more on the general macroeconomic conditions in the corporatist countries. This result can be explained by the fact that the explicit or implicit co-ordination of the wage bargaining in the corporatist countries restricts the insider power of workers, in other words their ability to capture part of the sectoral rents. In addition, the policy of 'wage solidarity' pursued by the unions in most of the corporatist countries reinforces this phenomenon. Vainiomäki and Laaksonen (1995: 172) emphasise in fact that "the difference (in the dispersion of inter-industry wage differentials) between Sweden and Finland (may derive from) less successful implementation of solidarity wage policy and more flexibility in industry level agreements in Finland". To sum up, the theory of 'rent-sharing' provides a plausible explanation for the lower dispersion of inter-industry wage differentials in the corporatist countries.

This interpretation of the heterogeneity of inter-industry wage differentials runs counter to the results of Calmfors and Driffill (1988), who support the existence of a bell-shaped relationship between the degree of centralisation of the wage bargaining and the macroeconomic performances of the industrialised countries. From a theoretical point of view, the ineffectiveness of the sectoral wage bargaining rests upon the following arguments : (i) contrary to the national level, the co-ordination of decisions is too weak at the sectoral level to encourage the unions to take on board all the externalities stemming from wage increases and (ii) the wage-employment elasticity at the sectoral level is lower than at the level of the individual companies. Accordingly, wage moderation here is less strong, which affects economic performances. To put it another way, Calmfors and Driffill suggest that sectoral bargaining accentuates the insider power of the workers (represented by the union organisations) and their ability to capture part of the rents. Yet our results invalidate this hypothesis (see Figure 2). They serve more to back up Bruno and Sachs (1985) results. Nevertheless, the relationship between the scale of the inter-industry wage differentials and labour market performance should be regarded with caution.

5. BARGAINING REGIMES AND THE STRUCTURE OF WAGES IN A CORPORATIST COUNTRY

There is a growing body of literature which suggests that the bargaining regimes which coexist within a country (for example, the existence of unionised and non-unionised sectors) have a significant impact on inter-industry wage disparities as well as wage levels. (e.g. Booth, 1995 and Pencavel, 1991). However, it relates almost exclusively to the Anglo-Saxon countries. In this section, we provide some results for the Belgian private sector. Unlike in the USA or Canada, the distinction between unionised and non-unionised sectors has no meaning in Belgium. The point is that virtually all workers are covered by a collective labour agreement. The bargaining regime is therefore reflected more through the level of wage bargaining. We distinguish primarily between two types of establishments : (i) those covered only by national and/or sectoral collective agreements and (ii) those where wages are collectively (re)negotiated in house. The followings questions are explored in this section : (i) Can we observe inter-industry wage differentials for every bargaining regime ? (ii) Are the sectors offering high/low wages similar for workers covered by different bargaining regimes ? (iii) Is the dispersion in inter-industry wage differentials higher when wages are (re)negotiated within companies ? (iv) What is the wage gap between workers covered by different bargaining regimes and what is behind it ? Before addressing these questions, we first focus on the specific features of wage bargaining in the Belgian private sector.

5.1. WAGE BARGAINING IN THE PRIVATE SECTOR

In the countries of North America (USA and Canada) the legal provisions offer workers the possibility of voting for or against their companies' joining a union in elections supervised by the public authorities. This means that the union can earn the exclusive right to represent all the workers, whether union members or not, in bargaining with the employers. Yet as the majority of the collective agreements are negotiated at the level of the individual companies, the institutional system leads to a clear distinction between the unionised establishments, in other words those which are subject to a collective agreement, and the non-unionised establishments. Besides, the rate of unionisation provides a good approximation of the coverage rate/the bargaining regime.

In Belgium, as in the majority of European countries, the situation is very different. The point is that wage bargaining in the Belgian private sector occurs at three levels : the company level, the sectoral level and the national (interprofessional) level. They generally occur every two years on a pyramidal basis. In principle, they are inaugurated by a national collective agreement defining a minimum level in wage terms. This national agreement can be improved within every sector of activity or at the regional level. Then we have the company negotiations where the sectoral/regional collective agreements may be renegotiated, except where there is a so-called imperative clause. However, these cannot give rise to a collective agreement which would run counter to the sectoral/regional or national agreements.

Belgium is characterised, in addition, by a coverage rate of about 90% (OECD, 1997). This stems from the fact that non-unionised workers, like employers not members of an employers' organisation, are generally covered by a collective agreement. The point is that Article 19 of the law dated 5 December 1968 specifies that a collective agreement is automatically binding upon the signatory organisations, employers who are members of those organisations or who have personally concluded the agreement, employers joining those organisations after the date of the conclusion of the agreement, and finally, all workers, *whether unionised or not*, who are employed by an employer so bound. Moreover, most of the sectoral collective agreements have been rendered obligatory by Royal Decree. This means that they apply compulsorily to all companies in the sector and to their workers, *whether or not they are members* of the signatory organisations (employers' organisations or unions).

To sum up, unlike in the USA or Canada, the bargaining regime in companies in the Belgian private sector does not derive directly from the latter's union membership. It is reflected more through the level of wage bargaining. The heart of the wage bargaining lies at the sectoral level in Belgium. However, in certain cases, sectoral agreements are renegotiated (improved) within individual companies.

5.2. BREAKDOWN OF THE SAMPLE

In order to gain the best picture of the influence of the bargaining regime on the structure of wages in Belgium, we have split our sample into two categories. These contain the following establishments : (i) those covered only by national and/or sectoral collective agreements and

(ii) those where wages are (re)negotiated collectively within the individual companies. We made this division by referring to the *Level of Collective Agreement on Pay* variable in the 1995 *Structure of Earnings Survey*. Notice that the exclusion of the individuals for which this variable was badly recorded reduced our sample from 67,023 to 61,580 units.

**Table 8 : Selected Descriptive Statistics by Bargaining Regime
(means, standard deviations)**

	<i>Bargaining regime</i> ¹ :	
	(i) Only national and/or sectoral CA	(ii) Company CA
Gross hourly wage (in BEF)	456	523
Seniority (years)	8.44 (8.60)	12.12 (9.32)
Prior experience (years)	10.53 (9.03)	7.83 (7.35)
Size of the establishment (number of workers)	222.60 (547.84)	949.72 (1610.57)
Working hours paid (in the reference period)	158.01 (31.74)	159.65 (27.13)
Female (yes)	33.6	27.4
Overtime paid (yes)	5.7	10.1
Bonuses for shift work, night work and/or weekend work (yes)	9.2	24.8
Number of observations in the sample (proportions in weighted sample)	34774 (0.57)	26806 (0.43)

Note : The descriptive statistics refer to the weighted sample.

¹ CA means collective (wage) agreement.

Table 8 sets out the means (standard deviations) of selected variables for the two bargaining regimes¹³. We note a clear-cut difference between the characteristics of the firms covered by a company collective agreement and those not so covered. The point is that companies within which wages are collectively (re)negotiated are significantly larger, gross hourly wages are larger, workers have more seniority, the number of hours paid is greater and the proportion of workers being paid a bonus for overtime or shift work, night work and/or weekend work is higher. Conversely, the prior experience of the workers and the proportion of women is lower

¹³ For a description of all the variables, see Appendix 1. The distribution of employment across bargaining regimes for Nace two-digit industries can be found in Appendix 4.

here. Table 8 shows, in addition, that 57% of the workers in the (weighted) sample are only covered by national and/or sectoral collective agreements.

5.3. BARGAINING REGIMES AND INTER-INDUSTRY WAGE DIFFERENTIALS

The methodology which we have adopted to measure the scale and dispersion of the inter-industry wage differentials for each bargaining regime is similar to the one described in section 4.1. This time it rests upon the estimation of a wage equation containing the following explanatory variables : the individual characteristics of the workers and their working conditions (X), sectoral dummies (Y) and the size of the establishments.

Table 9 : Bargaining Regimes and Inter-Industry Wage Differentials

<i>Industry (NACE 2-digit) :</i>	<i>Bargaining regime¹ :</i>	
	<i>(i)</i> <i>Only national</i> <i>and/or sectoral CA</i>	<i>(ii)</i> <i>Company CA</i>
Other mining and quarrying (14)	0.038	-0.013
Manufacture of food products and beverages (15)	-0.013	0.001
Manufacture of tobacco products (16)	0.022	0.038
Manufacture of textiles (17)	-0.069	-0.086
Manufacture of wearing apparel; dressing and dyeing of fur (18)	-0.107	-0.047
Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear (19)	-0.010	-0.243
Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (20)	-0.025	-0.046
Manufacture of pulp, paper and paper products (21)	0.000	0.067
Publishing, printing and reproduction of recorded media (22)	0.097	0.079
Manufacture of coke, refined petroleum products and nuclear fuel (23)	0.251	0.077
Manufacture of chemicals and chemical products (24)	0.048	0.098
Manufacture of rubber and plastic products (25)	0.027	-0.021
Manufacture of other non-metallic mineral products (26)	0.033	0.017
Manufacture of basic metals (27)	0.000	0.003
Manufacture of fabricated metal products, except machinery and equipment (28)	0.019	-0.033
Manufacture of machinery and equipment n.e.c. (29)	-0.020	-0.063
Manufacture of office machinery and computers (30)	0.016	/
Manufacture of electrical machinery and apparatus n.e.c. (31)	0.009	-0.041
Manufacture of radio, television and communications equipment and apparatus (32)	0.085	-0.047
Manufacture of medical, precision and optical instruments, watches and clocks (33)	0.065	-0.004
Manufacture of motor vehicles, trailers and semi-trailers (34)	0.010	-0.069
Manufacture of other transport equipment (35)	0.025	0.033
Manufacture of furniture; manufacturing n.e.c. (36)	-0.047	-0.076
Recycling (37)	-0.054	0.145
Electricity, gas, steam and hot water supply (40)	0.243	0.425
Construction (45)	0.019	-0.047
Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel (50)	-0.033	-0.044
Wholesale trade and commission trade, except of motor vehicles and	0.003	-0.071

motorcycles (51)		
Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods (52)	-0.136	-0.080
Hotels and restaurants (55)	-0.085	-0.134
Land transport; transport via pipelines (60)	-0.032	-0.119
Water transport (61)	0.171	0.271
Air transport (62)	0.067	0.105
Supporting and auxiliary transport activities; activities of travel agencies (63)	0.049	-0.003
Post and telecommunications (64)	0.284	0.096
Financial intermediation, except insurance and pension funding (65)	0.125	0.113
Insurance and pension funding, except compulsory social security (66)	0.114	0.044
Activities auxiliary to financial intermediation (67)	0.032	0.021
Real estate activities (70)	0.006	/
Renting of machinery and equipment without operator and of personal and household goods (71)	0.001	-0.039
Computer and related activities (72)	0.020	0.016
Research and development (73)	0.035	0.048
Other businesses activities (74)	0.013	0.009
R ² adjusted	0.710	0.677
F-test relative to the estimated relation	15277	10191
F-test relative to the sectoral dummies	1245	1022
Weighted adjusted standard deviation of the inter-industry differentials (d _k)	0.083	0.074
Number of sectors	43	41
Number of observations in the sample	34774	26806

Notes : ¹CA means collective (wage) agreement. All the estimates are significant at the level of 5%, except those in bold. They were estimated from a wage equation including the vectors *X* (individual characteristics and working conditions), *Y* (43 sectoral dummies) and *Z* (size of the establishments). For more details regarding the explanatory variables, see section 3.

Table 9 shows that for every bargaining regime, wage differentials exist between individuals apparently homogeneous from the point of view of their individual characteristics and their working environment. These differentials are significant both in individual terms and globally at the 5% threshold¹⁴. We further note that the hierarchy of the sectors in terms of wages is similar to the one we obtained for the aggregate sample (see section 4.2). In Nace 2-digit, we find among the best paid sectors : electricity, gas, steam and hot water supply; financial intermediaries (except insurance and pension funding); post and telecommunications; and manufacture of coke, refined petroleum and nuclear fuel industries. Furthermore, it is in the traditional sectors (hotels and restaurants, the textile industry and retailing) that wages are the lowest.

The hypothesis according to which the hierarchy of the wage differentials is similar for both bargaining regimes is confirmed by Table 10. In fact we see that the Pearson and Spearman

¹⁴ An identical analysis has been carried out for a Nace 3-digit nomenclature. The results arising from this, set out in Appendix 5, support our conclusions.

correlation coefficients between the wage differentials estimated for each bargaining regime reach almost 0.700, with a probability of being zero of less than 1%.

Table 10 : Correlation between the Inter-Industry Wage Differentials

<i>Bargaining regimes</i>	Company CA
Only national and/or sectoral CA	0.675** / 0.699**

Notes : CA means collective (wage) agreement.
 Pearson/Spearman correlation coefficients. * $p < 0.05$, ** $p < 0.01$.

This result underlines the existence of a *sectoral effect* on the workers’ wages, irrespective of the bargaining regime considered. In other words, the sectors offering high/low wages are similar for workers covered by different bargaining regimes. This is explained by the relative homogeneity of the organisational and technological characteristics of the establishments within each sector of activity. In addition, this result might be due to a phenomenon of mimetism (Dickens, 1986) : companies in which wages are not (re)negotiated collectively might be patterning their wage policy on those which do operate such an arrangement, in order to attract the best workers, to show their staff that they are being treated fairly and to curb the rate of manpower rotation.

5.3.1. Dispersion of Inter-Industry Wage Differentials

Should we infer from these results that the bargaining regime has no influence on the structure of wages in a corporatist country ? The analysis of the dispersion of the inter-industry wage differentials refutes this hypothesis. Table 9 reveals, in fact, that the WASD of the wage differentials is lower when wages are collectively (re)negotiated at the firm level¹. Indeed, the latter reaches 0.083 when there is only a national and/or sectoral collective agreement and 0.074 when wages are collectively (re)negotiated within the individual companies. The result needs to be analysed in more detail. Indeed, it seems reasonable to assume that collective (re)negotiation of wages at the firm level intensifies the correlation between the economic situation of the establishments (e.g. productivity, market share, prices) and the level of wages therein. Hence, we would expect the dispersion of inter-industry wage differentials to be *wider* among firms covered a company collective agreement.

¹ This result is supported by an analysis carried out for three-digit industries (see Appendix 5).

Where does this puzzle come from ? Table 11 presents the top and bottom 10 sectors according to their wage differentials (after controlling for individual characteristics, working conditions and firm size). It shows also the proportion of workers solely covered by national and/or sectoral collective agreements within these sectors.

Table 11 : Top/Bottom 10 Industry Wage Differentials and the Bargaining Regime

Rank	Industry	Inter-industry wage differentials	% workers solely covered by a national and/or sectoral CA
(1)	Post and telecommunications	+ 0.254	0.92
(2)	Electricity, gas, steam and hot water supply	+ 0.229	1.00
(3)	Manufacture of coke, refined petroleum products and nuclear fuel	+ 0.193	0.57
(4)	Water transport	+ 0.180	0.87
(5)	Air transport	+ 0.159	0.39
(6)	Financial intermediation, except insurance and pension funding	+ 0.113	0.20
(7)	Manufacture of chemicals and chemical products	+ 0.104	0.14
(8)	Publishing, printing and reproduction of recorded media	+ 0.095	0.81
(9)	Manufacture of pulp, paper and paper products	+ 0.067	0.12
(10)	Research and development	+ 0.057	0.53
(34)	Renting of machinery and equipment without operator and of personal and household goods	- 0.035	0.23
(35)	Manufacture of motor vehicles, trailers and semi-trailers	- 0.036	0.09
(36)	Manufacture of machinery and equipment n.e.c.	- 0.042	0.41
(37)	Land transport; transport via pipelines	- 0.059	0.81
(38)	Recycling	-0.059	0.91
(39)	Manufacture of textiles	- 0.069	0.74
(40)	Manufacture of furniture; manufacturing n.e.c.	-0.076	0.67
(41)	Hotels and restaurants	- 0.097	0.73
(42)	Manufacture of wearing apparel; dressing and dyeing of fur	- 0.109	0.88
(43)	Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods	- 0.110	0.54

Notes : The inter-industry wage differentials have been estimated from the aggregate sample controlling for individual characteristics, working conditions and firm size (see Table 4).

If we explore Table 11, we note that in the high-wage sectors (e.g. post and telecommunications; electricity, gas steam and hot water supply; water transport; manufacture of coke, refined petroleum products and nuclear fuel) and even more in the low-wage sectors (e.g. retail trade; manufacture of wearing apparel, dressing and dyeing of fur; hotels and restaurants; manufacture of textiles) most workers are solely covered by national and/or sectoral collective agreements. To put it differently, workers whose wages are covered by a company collective agreement appear to be more concentrated in sectors offering relatively

homogeneous wage premiums. As a result, Table 11 suggests that it is because of the asymmetrical sectoral distribution of employment shares (\bar{p}_k) in both sub-sample of firms, that the WASD of inter-industry wage differentials is found to be lower when wages are renegotiated at the firm level.

Table 12 : Dispersion of Inter-Industry Wage Differentials

<i>Specification (Nace 2-digit industries)</i>	<i>Bargaining regime¹ :</i>		
	Only national and/or sectoral CA		Company CA
WASD of inter-industry wage differentials (<i>Reference</i>)	0.083	>	0.074
◆ Standard deviation of inter-industry wage differentials (no weighting/adjustment)	0.086	<	0.109
◆ WASD of inter-industry wage differentials computed with sectoral employment shares of the first sub-sample of firms	0.083	<	0.100

Notes : ¹ CA stands for collective (wage) agreement.

² The first sub-sample of firms includes those solely covered by national and/or sectoral CA.

This explanation is backed up and took further by Table 12. Indeed, results show that² :

- (i) The standard deviation of the inter-industry wage differentials prior to weighting and adjustment is significantly higher when wages are (re)negotiated at the firm level.
- (ii) The WASD of the inter-industry wage differentials among the firms covered by a company collective agreement would have been larger than in those not so covered, if the distribution of sectoral employment had been the same as in the latter.

In sum, although we found that the WASD of inter-industry wage differentials is smaller when wages are covered by a company collective agreement, Table 12 shows that the reverse result would have appeared if the distribution of sectoral employment had been the same across bargaining regimes.

It is not easy to compare our results against those of other studies, because the latter relate essentially to the Anglo-Saxon countries and therefore refer to very different industrial

² Similar results were found for three-digit industries.

relations systems. Be that as it may, the literature do show that the unions significantly reduce the inter-industry and inter/intra-establishment wage differentials (Fortin and Lemieux, 1997; Freeman, 1980, 1982; Gosling and Machin, 1995; Hirsch, 1982; Metcalf, 1982; Stewart, 1991). Our results corroborate these findings, for they illustrate that, *ceteris paribus*, the dispersion of inter-industry wage differentials is higher when collective bargaining becomes more decentralised.

5.3.2. Wage Levels

What about the influence of the bargaining regime on the *level* of wages ? To answer this question, we have applied the decomposition procedure developed by Oaxaca (1973) and Blinder (1973), who showed that the difference between the average hourly wage (in logarithms) of workers covered by a different bargaining regime can be broken down as follows :

$$\bar{W}_d - \bar{W}_{nd} = (\bar{V}_d - \bar{V}_{nd})' \hat{\mathbf{b}}_{nd} + \bar{V}_d' (\hat{\mathbf{b}}_d - \hat{\mathbf{b}}_{nd}) \quad (7)$$

where the indices d and nd refer respectively to a discriminatory and a non-discriminatory wage structure, \bar{W} represents the average (Napierian logarithm) of the hourly wage, \bar{V} is a vector containing an intercept and the average values or frequencies of occurrence of the individual characteristics of the workers, their working conditions, their sectoral affiliation (174-categories nomenclature) and the size of their establishment¹⁵. The coefficients $\hat{\mathbf{b}}$ are obtained by estimating the following wage equation : $W_I = \mathbf{b}_I V_I + \mathbf{e}_I$, with $I = \{d, nd\}$ and \mathbf{e} an error term. They measure the estimated returns of the various variables contained in the vector V .

The procedure developed by Oaxaca and Blinder involves defining a non-discriminatory wage structure serving as a reference for the decomposition¹⁶. A non-discriminatory wage structure corresponds to a situation where the bargaining regime would have no effect upon the wages of individuals. In this case, wage disparities between workers covered by different

¹⁵ For a complete list of the explanatory variables, see Appendix 1.

¹⁶ For a discussion of the non-discriminatory wage structures that may be used for a decomposition, see Oaxaca and Ransom (1994).

bargaining regimes would be entirely explained by the diversity of their individual characteristics, their working environment and the features of the firm by which they are employed.

We have chosen as a non-discriminatory wage structure that of the workers (solely) covered by a national and/or sectoral collective agreement. This choice is justified by the following facts : (i) the heart of the collective bargaining is at the sectoral level in Belgium; (ii) this bargaining regime covers the greatest number of individuals. We thus arrive at the following equation :

$$\bar{W}_c - \bar{W}_s = (\bar{V}_c - \bar{V}_s)' \hat{\mathbf{b}}_s + \bar{V}_c' (\hat{\mathbf{b}}_c - \hat{\mathbf{b}}_s) \quad (8)$$

where the indices c and s respectively identify the workers covered by a company collective agreement and those covered solely by a national and/or sectoral collective agreement. The left-hand term in equation (8) measures the overall wage gap (in logarithms) between individuals covered by different bargaining regimes. The first right-hand term indicates the proportion of that wage gap which is explained by differences in terms of individual characteristics, working conditions, sectoral affiliation and the size of the company. The second right-hand term reflects the unexplained part of the wage gap. It measures the influence of the bargaining regime on the level of wages.

Table 13 : Decomposition of the Bargaining Regime Wage Gap

<i>Bargaining regime</i> ¹ :	<i>Wage gap</i> :		
	Overall ²	Explained	Unexplained
Company CA			
<i>versus</i>	14.7%	9.6%	5.1%
	(100)	(65.4)	(34.6)
Only national and/or sectoral CA			

Notes : ¹ CA means collective (wage) agreement. The reference wage structure (non-discriminatory) corresponds to that of workers (solely) covered by a national and/or sectoral collective agreement.

² Measured by the following expression : $\left[\frac{\tilde{W}_c - \tilde{W}_s}{\tilde{W}_s} \right] * 100$, where \tilde{W} corresponds to the mean wage in BEF.

Table 13 sets out the results of the Oaxaca-Blinder decomposition. This shows that the wage gap stands at 14.7% between workers (solely) covered by a national and/or sectoral collective agreement and workers whose wages are (re)negotiated within their establishment.

Approximately 65% of this wage gap results from the individual characteristics of the workers, their working conditions, their sectoral affiliation and the size of their establishment. In other words, results indicate that all other things being equal workers covered by a company collective agreement earn 5.1% more than their opposite numbers who are (solely) covered by a national and/or sectoral collective agreement.

Table 14 : Bargaining Regimes and Wage Levels – A Comparison

Country	Influence of the bargaining regime on wage level in %	Degree of corporatism	
		Calmfors & Driffill ^a	Bruno & Sachs ^b
Netherlands	4 ^c	10	14
Austria	5 ^d	16	16
Belgium	5.1 ^e	9	8
Germany	6 ^d	11	15
Italy	4.4 – 7.5 ^f	5	4
Norway	7.5 ^g	15	13
UK	8 – 12 ^h	6	6
USA	15 ⁱ	2	1
Australia	15 – 17 ^j	8	3
Canada	20 and more ^k	1	2

Notes :

^a : Reversed Calmfors and Driffill corporatism index (1988). 16 = highly corporatist country.

^b : Reversed Bruno and Sachs corporatism index (1985). 16 = highly corporatist country.

^c : Hartog et al. (1997). ^d : Blanchflower and Freeman (1992). ^e : Own calculations (see Table 13). ^f : Dell'Aringa and Lucifora (1994). ^g : Barth et al. (1994). ^h : Andrews et al. (1998), Stewart (1987). ⁱ : Booth (1995) and Pencavel (1991). ^j : Christie (1992). ^k : Robinson (1989) and Robinson and Tomes (1984).

In an international perspective, our results support the hypothesis that the sensitivity of wages to the bargaining regime is significantly lower in corporatist countries. Indeed, as shown in Table 14, the estimated union - non union wage gap is over 20% in Canada (Robinson, 1989 and Robinson and Tomes, 1984), between 15 and 17% in Australia (Christie, 1992) and approximately 15% in the USA (Booth, 1995; Pencavel, 1991). The studies on the UK, for their part, reveal the existence of a union wage gap which stands at between 8 and 12% (Andrews et al., 1998) with sizeable differences depending on the bargaining regime considered (Stewart, 1987). The results in the case of continental Europe are rarer. Dell'Aringa and Lucifora (1994), however, report a union wage gap of 4.4% for unskilled workers and 7.5% for skilled workers in the metal-mechanical industry in Italy. In Germany, Austria and the Netherlands, this effect would be respectively 6.5%¹⁷ (Blanchflower and

¹⁷ Results for Austria and Germany should be regarded with care because they have been measured rather inadequately. Indeed, they reflect the impact of individual membership on wages and not that of the bargaining regime.

Freeman, 1992) and 4% (Hartog et al., 1997). Finally, according to Barth et al. (1994), Norwegian workers covered by a company collective agreement would, all other things being equal, earn 7.5% more than their opposite numbers (solely) covered by a national collective agreement.

6. CONCLUSION

The current understanding of the structure of wages and more particularly inter-industry wage disparities in Belgium is very limited. Such an analysis in fact requires a major database matching the characteristics of the establishments and those working therein which has not been available until now. Moreover, the results as to the influence of the bargaining regimes on inter-industry wage disparities and on wage levels in the countries of continental Europe are fragmentary. Therefore in this paper, we have addressed both issues for the Belgian private sector on the basis of the 1995 *Structure of Earnings Survey*. It is a rich worker-firm matched database which has never been used before.

In the first section of this paper, we highlighted the fact that the structure of wages in the Belgian private sector is incompatible with the neo-classical model, according to which wage disparities in equilibrium are explained either by differences in the quality of the labour force, or by so-called compensating differences. In fact we note that wage differentials subsist between agents who are apparently similar from the point of view of their individual characteristics and their working conditions. Our results also suggest that these differences derive partly from the characteristics of the employers in each sector (size of the establishment, wage bargaining regime). Hence, they indicate that the determination of wages within each industry is influenced by the organisational and technological characteristics of the establishments making it up. Moreover, in an international perspective, our findings support the existence of a negative relation between the dispersion of the inter-industry wage differentials and the degree of corporatism of the industrialised countries.

How are we to interpret these results ? The wage disparities observed between the various sectors militate in favour of the efficiency wage theory. Indeed, the latter shows that if the incentive conditions for effort vary between sectors, then two individuals with identical individual characteristics, placed in the same working conditions, are likely to earn different

wages. However, this theory does not make it clear why the non-competitive wage disparities are greater in the non-corporatist countries. In point of fact, the constraints forcing employers to pay *efficient* wages, in other words wages higher than the competitive level, seem similar among the industrialised countries. We argue that the rent-sharing theory provides a more reliable explanation. In other words, we believe that inter-industry wage differentials are lower in the corporatist countries because of the explicit or implicit co-ordination of the wage bargaining, which restricts the insider power of the workers, i.e their ability to capture part of the sectoral rents. Notice, that this phenomenon is also reinforced by the policy of ‘wage solidarity’ pursued by the unions in most of the corporatist countries. This interpretation of the heterogeneity of the inter-industry wage differentials runs counter to the theoretical foundations of the Calmfors and Driffill results (1988). The point is that it rejects the hypothesis that the non-competitive wage differentials would be greater in those countries where wage bargaining is conducted primarily at the sectoral level. It serves more to back up Bruno and Sachs (1985) results. Nevertheless, the relationship between the scale of inter-industry wage differentials and labour market performance should be regarded with caution.

In the second part of this contribution, we emphasised the existence of a *sectoral effect* on the workers’ wages, irrespective of the bargaining regime considered. In other words, our results show that the sectors offering high/low wages are similar for workers covered by different bargaining regimes. This result is explained by the relative homogeneity of the organisational and technological characteristics of the establishments within each sector of activity. In addition, it might be due to a phenomenon of mimetism (Dickens, 1986) : companies in which wages are not (re)negotiated collectively might be patterning their wage policy on those which do operate such an arrangement, in order to attract the best workers, to show their staff that they are being treated fairly and to curb the rate of manpower rotation. Nevertheless, our findings do show that the bargaining regime has a significant impact upon the structure of the wages in Belgium. Indeed, we note that, *ceteris paribus*, the dispersion of inter-industry wage differentials is higher when wages are covered by a company collective agreement. This finding is in line with other studies (Fortin and Lemieux, 1997; Freeman, 1980, 1982; Gosling and Machin, 1995; Hirsch, 1982; Metcalf, 1982; Stewart, 1991) which suggest that inter/intra-industry wage differentials are higher when wage setting is more decentralised. Moreover, our results indicate that the bargaining regime has a significant influence on the level of wages and that, *ceteris paribus*, workers covered by a company collective agreement earn 5.1% more than their opposite numbers who are (solely) covered by national and/or sectoral collective

agreements. In an international perspective, this finding supports the hypothesis that the sensitivity of wages to the bargaining regime is significantly lower in corporatist countries.

Future research concerning the magnitude of inter-industry wage differentials and the impact of the bargaining regime on the structure of wages in the Belgian private sector should rely on a longitudinal database in order to control for the non observed individual characteristics of the workers. Indeed, these characteristics might modify our results if it emerged that they were not distributed randomly between sectors and/or bargaining regimes. Unfortunately, at the moment such database does not exist. In addition, future analysis should try to control for a potential firm selectivity effect, i.e. for the fact that firms in a particular bargaining regime might not be representative of the overall sample of firms. However, as pointed out by Hartog et al. (1997: 7), this will remain a very difficult task “as long as no (satisfactory) independent variables to control for the endogeneity of the bargaining regime are available”.

APPENDICES

Appendix 1 : Description of the Variables

	Overall sample
Continuous variables	
	<i>Average</i>
Gross hourly wage	
Gross hourly wage (in BEF), includes overtime paid and bonuses for shift work, night work and/or weekend work. Pay for holiday, 13 th month, arrears, advances, travelling expenses etc. are excluded.	481.03 (224.02)
Seniority in the company	9.85
Seniority in the company (years)	(9.03)
Prior experience	9.49
Experience accumulated on the labour market before the lost job (years)	(8.52)
Size of the establishment	500.89
Size of the establishment (number of workers)	(1145.09)
Hours	159.65
Number of hours paid, including overtime paid	(27.13)
Dummy variables	
	<i>Frequency</i>
Sex	
Female	31.4
Male (reference)	68.6
Education	
Primary or no degree : 0-6 years (reference)	9.7
Lower secondary : 9 years	24.3
General upper secondary : 12 years	18.4
Technical/Artistic/Prof. upper secondary : 12 years	24.9
Higher non-university short type, higher artistic training : 14 years	13.9
University and non-university higher education, long type : 16 years	8.4
Post-graduate : 17 years or more	0.5
Occupation	
Corporate managers	6.3

Managers of small enterprises	0.1
Physical, mathematic and engineer science professionals	3.7
Life science and health professionals	0.3
Teaching professionals	0.0
Other professionals	1.8
Physical and engineer science associate professionals	10.0
Life science and health associate professionals	0.2
Teaching associate professionals	0.0
Other associate professionals	4.8
Office clerks (reference)	18.8
Customer services clerks	1.3
Personal and protective services workers	3.2
Models, salespersons and demonstrators	7.4
Extraction and building trading workers	4.3
Metal, machinery and related trades workers	8.6
Precision, handicraft, printing workers	1.5
Other craft and related trades workers	4.5
Stationary plant and related operators	2.4
Machine operators and assemblers	5.0
Drivers and mobile plant operators	4.6
Sales and services elementary occupations	3.8
Labourers in mining, construction, manufacturing and transport	7.3
Region (geographic location of the establishment)	
Brussels (reference)	17.6
Wallonia	19.4
Flanders	63.0
Supervises the work of his or her co-workers	
No (reference)	83.7
Yes	16.3
Level of wage bargaining	
Collective wage agreement at the company level	39.3
Collective wage agreement only at the national and/or sectoral level (reference)	51.7
Other	9.0
Contract	
Unlimited-term employment contract (reference)	97.0
Limited-term employment contract	2.4
Apprentice/Trainee contract	0.1
Other	0.5
Bonus for shift work, night work and/or weekend work	

	No (reference)	84.9
	Yes	15.1
Overtime paid		
	No (reference)	92.7
	Yes	7.3
Industry		
	Other mining and quarrying (14)	0.3
	Manufacture of food products and beverages (15)	5.2
	Manufacture of tobacco products (16)	0.3
	Manufacture of textiles (17)	3.4
	Manufacture of wearing apparel; dressing and dyeing of fur (18)	1.2
	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear (19)	0.2
	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (20)	1.0
	Manufacture of pulp, paper and paper products (21)	1.2
	Publishing, printing and reproduction of recorded media (22)	1.8
	Manufacture of coke, refined petroleum products and nuclear fuel (23)	0.4
	Manufacture of chemicals and chemical products (24)	5.2
	Manufacture of rubber and plastic products (25)	1.8
	Manufacture of other non-metallic mineral products (26)	2.8
	Manufacture of basic metals (27)	2.6
	Manufacture of fabricated metal products, except machinery and equipment (28)	3.3
	Manufacture of machinery and equipment n.e.c. (29)	3.0
	Manufacture of office machinery and computers (30)	0.0
	Manufacture of electrical machinery and apparatus n.e.c. (31)	1.4
	Manufacture of radio, television and communications equipment and apparatus (32)	1.4
	Manufacture of medical, precision and optical instruments, watches and clocks (33)	0.3
	Manufacture of motor vehicles, trailers and semi-trailers (34)	3.6
	Manufacture of other transport equipment (35)	0.8
	Manufacture of furniture; manufacturing n.e.c. (36)	1.9
	Recycling (37)	0.2
	Electricity, gas, steam and hot water supply (40)	1.4
	Collecting, purification and distribution of water (41)	/
	Construction (45)	4.7
	Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel (50)	2.4
	Wholesale trade and commission trade, except of motor vehicles and motorcycles (51)	11.0
	Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods (52)	9.5
	Hotels and restaurants (55)	3.0

Land transport; transport via pipelines (60)	2.8
Water transport (61)	0.1
Air transport (62)	0.1
Supporting and auxiliary transport activities; activities of travel agencies (63)	1.6
Post and telecommunications (64)	0.4
Financial intermediation, except insurance and pension funding (65)	6.6
Insurance and pension funding, except compulsory social security (66)	2.1
Activities auxiliary to financial intermediation (67)	0.3
Real estate activities (70)	0.2
Renting of machinery and equipment without operator and of personal and household goods (71)	0.3
Computer and related activities (72)	1.1
Research and development (73)	0.2
Other businesses activities (74)	8.9
<hr/> Number of observations in the sample	<hr/> 67023

Note : The descriptive statistics refer to the weighted sample.

¹ Collective wage agreement at the company level; ² Collective wage agreement only at the national and/or sectoral level.

Appendix 2 : Complete Wage Equation

Explanatory variables ¹	Coefficients	t-stat	Wage ²	Variation ³
Constant (reference)	5.524**	1434.89	251	0.0
<i>Education</i>				
Primary or no degree : 0-6 years (reference)	Reference			
Lower secondary : 9 years	0.053**	70.09	265	5.4
General upper secondary : 12 years	0.140**	159.21	289	15.0
Technical/Artistic/Prof. upper secondary : 12 years	0.128**	156.76	285	13.7
Higher non-university short type, higher artistic training : 14 years	0.221**	219.79	313	24.7
University and non-university higher education, long type : 16 years	0.383**	324.12	368	46.7
Post-graduate : 17 years or more	0.510**	176.45	418	66.5
<i>Prior experience</i>				
Simple	0.016**	118.87		
Squared/10 ²	-0.036**	-40.48		
Cubed/10 ⁴	0.022**	13.31		
<i>Seniority in the company</i>				
Simple	0.016**	220.70		
Squared/10 ²	-0.017**	-71.06		
Dummy=1 if the individual has no seniority	-0.010**	-4.48		
<i>Sex</i>				
Male	Reference			
Female	-0.116**	-227.73	224	-11.0
<i>Occupation</i>				
Office clerks	Reference			
Corporate managers	0.360**	349.79	360	43.3
Managers of small enterprises	0.068**	9.79	269	7.0
Physical, mathematic and engineer science professionals	0.162**	132.95	295	17.6
Life science and health professionals	0.146**	34.65	290	15.7
Teaching professionals	0.127**	13.42	285	13.5
Other professionals	0.120**	77.78	283	12.7
Physical and engineer science associate professionals	0.019**	22.93	256	1.9
Life science and health associate professionals	-0.069**	-16.01	234	-6.7
Teaching associate professionals	0.057**	2.59	266	5.9
Other associate professionals	0.091**	90.66	275	9.5
Customer services clerks	-0.054**	-29.63	238	-5.3
Personal and protective services workers	-0.064**	-33.21	235	-6.2
Models, salespersons and demonstrators	-0.070**	-68.25	234	-6.7
Extraction and building trading workers	-0.059**	-46.91	237	-5.7
Metal, machinery and related trades workers	-0.063**	-65.07	236	-6.1
Precision, handicraft, printing workers	-0.068**	-32.68	234	-6.6
Other craft and related trades workers	-0.089**	-72.44	230	-8.5
Stationary plant and related operators	-0.060**	-39.70	236	-5.8
Machine operators and assemblers	-0.077**	-68.18	232	7.4
Drivers and mobile plant operators	-0.108**	-87.33	225	-10.2
Sales and services elementary occupations	-0.134**	-91.89	220	-12.5
Labourers in mining, construction, manufacturing and transport	-0.108**	-111.06	225	-10.2
<i>Region</i>				
Brussels	Reference			
Wallonia	-0.036**	-49.91	242	-3.5
Flanders	-0.037**	-61.39	242	-3.6
<i>Supervises the work of his or her co-workers</i>				
No	Reference			
Yes	0.110**	177.14	280	11.6
<i>Hours</i>				
Ln of the number of hours paid, including overtime paid	-0.000	-0.65	251	-0.0

<i>Bonus for shift work, night work and/or weekend work</i>				
No	Reference			
Yes	0.057**	87.39	266	5.9
<i>Overtime paid</i>				
No	Reference			
Yes	0.024**	30.61	257	2.4
<i>Contract</i>				
Unlimited-term employment contract	Reference			
Limited-term employment contract	-0.025**	-19.10	245	-2.5
Apprentice/Trainee contract	-0.636**	-124.12	133	-47.1
Other employment contract	-0.024**	-8.48	245	-2.4
<i>Size of the establishment</i>				
Ln size of the establishment (number of workers)	0.029**	165.05		
<i>Level of wage bargaining</i>				
CA at the company level	Reference			
CA only at the national and/or sectoral level (reference)	0.023**	42.39	257	2.3
Other	-0.016**	-22.60	247	-1.6
R ² adjusted	0.713			
F-test	11792.23**			
Number of observations	67023			

Notes : * $p < 0.05$, ** $p < 0.01$. ¹ 173 indicators of sectoral affiliation have also been included in the regression.

² Gross hourly wage in BEF

³ Variation in % with regard to the reference.

Appendix 3 : Inter-Industry Wage Differentials and their Dispersion

<i>Industry (Nace 3-digit)</i>	<i>Variables included in the wage equation:</i>		
	<i>(i) Y</i>	<i>(ii) X, Y</i>	<i>(iii) X, Y, Z</i>
Quarrying of stone (141)	0,020	0,014	0,022
Quarrying of sand and clay (142)	0,119	0,062	0,067
Mining of chemical and fertiliser minerals (143)	0,200	-0,094	-0,028
Other mining and quarrying n.e.c. (145)	-0,216	-0,194	-0,163
Production, processing and preserving of meat and meat products (151)	-0,185	-0,035	-0,025
Processing and preserving of fish and fish products (152)	-0,269	-0,092	-0,066
Processing and preserving of fruit and vegetables (153)	-0,125	-0,073	-0,088
Manufacture of vegetable and animal oils and fats (154)	0,178	0,092	0,059
Manufacture of dairy products (155)	0,032	0,026	0,001
Manufacture of grain mill products, starches and starch products (156)	0,085	0,056	0,033
Manufacture of prepared animal feeds (157)	0,047	0,011	0,016
Manufacture of other food products (158)	-0,109	-0,010	-0,007
Manufacture of beverages (159)	-0,047	-0,030	-0,036
Manufacture of tobacco product (160)	0,039	0,033	0,021
Preparation and spinning of textile fibres (171)	-0,153	-0,054	-0,080
Textile weaving (172)	-0,130	-0,040	-0,050
Finishing of textiles (173)	-0,221	-0,123	-0,127
Manufacture of made-up textile articles, except apparel (174)	-0,274	-0,104	-0,109
Manufacture of other textiles (175)	-0,133	-0,022	-0,028
Manufacture of knitted and crocheted fabrics (176)	-0,132	-0,119	-0,102
Manufacture of knitted and crocheted articles (177)	-0,487	-0,283	-0,250
Manufacture of other wearing apparel and accessories (182)	-0,273	-0,125	-0,115
Dressing and dyeing of fur; manufacture of articles of fur (183)	-0,387	-0,206	-0,165
Tanning and dressing of leather (191)	-0,280	-0,115	-0,115
Manufacture of luggage, handbags and the like, saddlery and harness (192)	-0,229	0,061	0,021
Manufacture of footwear (193)	-0,195	-0,075	-0,036
Sawmilling and planing of wood, impregnation of wood (201)	-0,152	-0,065	-0,037
Manufacture of veneer sheets; manufacture of plywood, laminboard, particle board, fibre board and other panels and boards (202)	-0,090	0,004	0,007
Manufacture of builders' carpentry and joinery (203)	-0,162	-0,059	-0,043
Manufacture of wooden containers (204)	-0,192	-0,040	-0,009
Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials (205)	-0,139	-0,082	-0,066
Manufacture of pulp, paper and paperboard (211)	0,230	0,244	0,199
Manufacture of articles of paper and paperboard (212)	0,019	0,049	0,018
Publishing (221)	0,164	0,048	0,027
Printing and service activities related to printing (222)	0,081	0,089	0,097
Manufacture of coke oven products (231)	0,102	0,118	0,084
Manufacture of refined petroleum products (232)	0,460	0,290	0,267
Processing of nuclear fuel (233)	0,277	0,058	0,049
Manufacture of basic chemicals (241)	0,321	0,211	0,161
Manufacture of pesticides and other agro-chemical products (242)	0,237	0,106	0,100
Manufacture of paints, varnishes and similar coatings, printing ink and mastics (243)	0,123	0,101	0,075
Manufacture of pharmaceuticals, medicinal chemicals and botanical product (244)	0,154	0,060	0,026
Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations (245)	-0,037	0,009	-0,026
Manufacture of other chemical products (246)	0,254	0,122	0,107
Manufacture of man-made fibres (247)	-0,069	0,055	0,033
Manufacture of rubber products (251)	0,020	0,010	-0,017

Manufacture of plastic products (252)	-0,005	0,007	0,005
Manufacture of glass and glass products (261)	0,067	0,060	0,012
Manufacture of non-refractory ceramic goods other than for construction purposes; manufacture of refractory ceramic products (262)	0,060	0,046	0,013
Manufacture of ceramic tiles and flags (263)	-0,089	-0,050	-0,035
Manufacture of bricks, tiles and construction products, in baked clay (264)	-0,039	-0,013	-0,021
Manufacture of cement, lime and plaster (265)	0,268	0,195	0,172
Manufacture of articles of concrete, plaster and cement (266)	-0,038	0,015	0,020
Cutting, shaping and finishing of stone (267)	-0,089	-0,028	0,029
Manufacture of other non-metallic mineral products (268)	0,159	0,092	0,088
Manufacture of basic iron and steel and of ferro-alloys (ECSC) (271)	0,278	0,106	0,011
Other first processing of iron and steel and production of non-ECSC ferro-alloys (273)	0,185	0,111	0,046
Manufacture of basic precious and non-ferrous metals (274)	0,214	0,145	0,086
Casting of metals (275)	-0,038	-0,026	-0,031
Manufacture of structural metal products (281)	-0,097	-0,017	-0,005
Manufacture of tanks, reservoirs and containers of metal; manufacture of central heating radiators and boilers (282)	-0,077	-0,004	-0,007
Manufacture of steam generators, except central heating hot water boilers (283)	-0,047	-0,025	-0,031
Forging, pressing, stamping and roll forming of metal; powder metallurgy (284)	0,056	0,064	0,064
Treatment and coating of metals; general mechanical engineering (285)	-0,101	-0,021	-0,006
Manufacture of cutlery, tools and general hardware (286)	-0,125	-0,030	-0,008
Manufacture of other fabricated metal products (287)	-0,065	0,000	0,002
Manufacture of machinery for the production and use of mechanical power, except aircraft, vehicle and cycle engines (291)	0,078	0,043	0,026
Manufacture of other general purpose machinery (292)	-0,045	-0,054	-0,054
Manufacture of agricultural and forestry machinery (293)	-0,070	0,031	-0,036
Manufacture of machine-tools (294)	0,042	-0,015	-0,034
Manufacture of other special purpose machinery (295)	-0,002	-0,017	-0,058
Manufacture of weapons and ammunition (296)	0,170	0,170	0,100
Manufacture of domestic appliances n.e.c. (297)	-0,132	-0,117	-0,133
Manufacture of office machinery and computers (300)	-0,223	-0,039	0,013
Manufacture of electric motors, generators and transformers (311)	-0,022	0,009	-0,023
Manufacture of electricity distribution and control apparatus (312)	-0,015	0,048	0,011
Manufacture of insulated wire and cable (313)	0,057	0,105	0,055
Manufacture of accumulators, primary cells and primary batteries (314)	0,139	0,103	0,049
Manufacture of lighting equipment and electric lamps (315)	0,026	0,011	-0,013
Manufacture of electrical equipment n.e.c. (316)	-0,072	-0,055	-0,094
Manufacture of electronic valves and tubes and other electronic components (321)	0,094	0,051	0,021
Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy (322)	0,258	0,109	0,054
Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods (323)	-0,037	-0,068	-0,101
Manufacture of medical and surgical equipment and orthopaedic appliances (331)	0,252	0,106	0,064
Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment (332)	0,145	0,108	0,086
Manufacture of industrial process control equipment (333)	0,017	-0,007	0,008
Manufacture of optical instruments and photographic equipment (334)	-0,129	-0,167	-0,167
Manufacture of watches and clocks (335)	-0,150	-0,137	-0,107
Manufacture of motor vehicles (341)	0,131	0,090	-0,014
Manufacture of bodies (coachwork) for motor vehicles; manufacture of	-0,076	0,000	-0,066

trailers and semi-trailers (342)			
Manufacture of parts and accessories for motor vehicles and their engines (343)	-0,051	0,002	-0,034
Building and repairing of ships and boats (351)	0,013	-0,004	0,010
Manufacture of railway and tramway locomotives and rolling stock (352)	0,173	0,034	0,007
Manufacture of aircraft and spacecraft (353)	0,197	0,108	0,035
Manufacture of motorcycles and bicycles (354)	0,042	-0,009	-0,015
Manufacture of other transport equipment n.e.c. (355)	-0,293	-0,113	-0,072
Manufacture of furniture (361)	-0,138	-0,062	-0,057
Manufacture of jewellery and related articles (362)	-0,392	-0,289	-0,252
Manufacture of musical instruments (363)	-0,219	-0,058	0,005
Manufacture of sports goods (364)	-0,184	-0,141	-0,105
Manufacture of games and toys (365)	-0,070	0,051	0,002
Miscellaneous manufacturing n.e.c (366)	-0,222	-0,100	-0,111
Recycling of metal waste and scrap (371)	0,122	0,141	0,149
Recycling of non-metal waste and scrap (372)	-0,367	-0,124	-0,098
Production and distribution of electricity (401)	0,411	0,273	0,237
Manufacture of gas; distribution of gaseous fuels through mains (402)	0,496	0,324	0,320
Collection, purification and distribution of water (410)	/	/	/
Site preparation (451)	-0,173	-0,020	0,006
Building of complete constructions or parts thereof; civil engineering (452)	-0,068	0,001	0,016
Building installation (453)	-0,090	-0,064	-0,052
Building completion (454)	-0,091	-0,029	0,011
Renting of construction or demolition equipment with operator (455)	-0,105	0,062	0,122
Sale of motor vehicles (501)	0,075	0,029	0,029
Maintenance and repair of motor vehicles (502)	-0,133	-0,084	-0,040
Sale of motor vehicle parts and accessories (503)	-0,101	-0,107	-0,077
Sale, maintenance and repair of motorcycles and related parts and accessories (504)	-0,176	-0,117	-0,057
Retail sale of automotive fuel (505)	-0,205	-0,075	-0,042
Wholesale on a fee or contract basis (511)	0,209	0,087	0,154
Wholesale of agricultural raw materials and live animals (512)	-0,063	-0,050	-0,049
Wholesale of food, beverages and tobacco (513)	-0,111	-0,064	-0,056
Wholesale of household goods (514)	0,054	-0,031	-0,003
Wholesale of non-agricultural intermediate products, waste and scrap (515)	0,049	0,001	0,030
Wholesale of machinery, equipment and supplies (516)	0,130	-0,001	0,018
Other wholesale (517)	0,080	-0,083	-0,065
Retail sale in non-specialised stores (521)	-0,256	-0,102	-0,108
Retail sale of food, beverages and tobacco in specialised stores (522)	-0,449	-0,210	-0,172
Retail sale of pharmaceutical and medical goods, cosmetic and toilet articles (523)	0,035	-0,059	-0,077
Other retail sale of new goods in specialised store (524)	-0,280	-0,150	-0,127
Retail sale of second-hand goods in stores (525)	-0,456	-0,253	-0,204
Retail sale not in stores (526)	-0,107	-0,059	-0,067
Repair of personal and household goods (527)	-0,224	-0,119	-0,151
Hotels (551)	-0,276	-0,154	-0,134
Camping sites and other provision of short-stay accommodation (552)	-0,242	-0,124	-0,096
Restaurants (553)	-0,391	-0,193	-0,156
Bars (554)	-0,373	-0,170	-0,125
Canteens and catering (555)	-0,314	-0,137	-0,124
Transport via railways (601)	/	/	/
Other land transport (602)	-0,200	-0,079	-0,062
Sea and coastal water transport (611)	0,336	0,168	0,150
Inland water transport (612)	0,116	0,197	0,245

Scheduled air transport (621)	0,184	0,165	0,185
Non-scheduled air transport (622)	-0,023	0,044	0,078
Space transport (623)	0,014	0,041	0,036
Cargo handling and storage (631)	0,106	0,073	0,099
Other supporting transport activities (632)	-0,183	-0,117	-0,086
Activities of travel agencies and tour operators; tourist assistance activities n.e.c. (633)	-0,072	-0,053	-0,065
Activities of other transport agencies (634)	0,055	0,040	0,061
Post and courier activities (641)	-0,189	-0,091	-0,125
Telecommunications (642)	0,614	0,395	0,346
Monetary intermediation (651)	0,336	0,163	0,122
Other financial intermediation (652)	0,221	0,083	0,105
Insurance and pension funding, except compulsory social security (660)	0,222	0,091	0,062
Activities auxiliary to financial intermediation, except insurance and pension funding (671)	0,209	0,085	0,138
Activities auxiliary to insurance and pension funding (672)	0,081	-0,018	0,005
Real estate activities with own property (701)	0,040	-0,011	0,060
Letting of own property (702)	-0,154	-0,092	-0,023
Real estate activities on a fee or contract basis (703)	-0,102	-0,069	0,006
Renting of automobiles (711)	0,063	-0,033	-0,013
Renting of other transport equipment (712)	-0,104	-0,031	-0,033
Renting of other machinery and equipment (713)	-0,047	-0,051	-0,040
Renting of personal and household goods n.e.c. (714)	-0,226	-0,252	-0,208
Hardware consultancy (721)	0,221	0,017	0,030
Software consultancy and supply (722)	0,204	0,003	-0,003
Data processing (723)	0,269	0,108	0,127
Data base activities (724)	-0,020	-0,108	-0,086
Maintenance and repair of office, accounting and computing machinery (725)	-0,032	-0,096	-0,092
Other computer related activities (726)	-0,087	-0,274	-0,196
Research and experimental development on natural sciences and engineering (731)	0,302	0,090	0,064
Research and experimental development on social sciences and humanities (732)	0,588	0,156	0,207
Legal, accounting, book-keeping and auditing activities; tax consultancy; market research and public opinion polling; business and management consultancy; holdings (741)	0,249	0,060	0,094
Architectural and engineering activities and related technical consultancy (742)	0,167	-0,008	0,014
Technical testing and analysis (743)	0,210	0,073	0,099
Advertising (744)	0,050	-0,020	0,019
Labour recruitment and provision of personnel (745)	-0,247	-0,110	-0,073
Investigation and security activities (746)	-0,183	-0,101	-0,122
Industrial cleaning (747)	-0,300	-0,015	-0,020
Miscellaneous business activities n.e.c (748)	-0,082	-0,102	-0,080
R ² adjusted	0,327	0,703	0,713
F-test relative to the estimated relation	2928	11404	11792
F-test relative to the sectoral dummies	2928	1075	798
Weighted adjusted standard deviation (WASD) of the inter-industry differentials (d_k)	0,199	0,103	0,086
Number of industries	174	174	174
Number of observation in the sample	67023	67023	67023

Notes : All the estimates are significant at the level of 5%, except those in bold.

Y : sectoral dummies , X : individual characteristics and working conditions, Z : specific features of the companies.

Appendix 4 : Type of Bargaining Regime by Sector, Proportions

<i>Industry (NACE 2-digit)</i>	<i>Bargaining regime¹ :</i>	
	<i>(i)</i> <i>Only national</i> <i>and/or sectoral CA</i>	<i>(ii)</i> <i>Company CA</i>
	<i>Proportions across</i> <i>bargaining regimes (%)</i>	
Other mining and quarrying (14)	0.83	0.17
Manufacture of food products and beverages (15)	0.59	0.41
Manufacture of tobacco products (16)	0.81	0.19
Manufacture of textiles (17)	0.74	0.26
Manufacture of wearing apparel; dressing and dyeing of fur (18)	0.88	0.12
Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear (19)	0.97	0.03
Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (20)	0.85	0.15
Manufacture of pulp, paper and paper products (21)	0.12	0.88
Publishing, printing and reproduction of recorded media (22)	0.81	0.19
Manufacture of coke, refined petroleum products and nuclear fuel (23)	0.57	0.43
Manufacture of chemicals and chemical products (24)	0.14	0.86
Manufacture of rubber and plastic products (25)	0.38	0.62
Manufacture of other non-metallic mineral products (26)	0.42	0.56
Manufacture of basic metals (27)	0.10	0.90
Manufacture of fabricated metal products, except machinery and equipment (28)	0.63	0.37
Manufacture of machinery and equipment n.e.c. (29)	0.41	0.59
Manufacture of office machinery and computers (30)	1.00	0.00
Manufacture of electrical machinery and apparatus n.e.c. (31)	0.22	0.78
Manufacture of radio, television and communications equipment and apparatus (32)	0.50	0.50
Manufacture of medical, precision and optical instruments, watches and clocks (33)	0.33	0.67
Manufacture of motor vehicles, trailers and semi-trailers (34)	0.09	0.91
Manufacture of other transport equipment (35)	0.49	0.51
Manufacture of furniture; manufacturing n.e.c. (36)	0.67	0.33
Recycling (37)	0.91	0.09
Electricity, gas, steam and hot water supply (40)	1.00	0.00
Construction (45)	0.87	0.13
Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel (50)	0.72	0.28
Wholesale trade and commission trade, except of motor vehicles and motorcycles (51)	0.80	0.20
Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods (52)	0.54	0.46
Hotels and restaurants (55)	0.73	0.27
Land transport; transport via pipelines (60)	0.81	0.19
Water transport (61)	0.87	0.13
Air transport (62)	0.39	0.61
Supporting and auxiliary transport activities; activities of travel agencies (63)	0.67	0.33
Post and telecommunications (64)	0.92	0.08
Financial intermediation, except insurance and pension funding (65)	0.20	0.80
Insurance and pension funding, except compulsory social security (66)	0.27	0.73
Activities auxiliary to financial intermediation (67)	0.67	0.33
Real estate activities (70)	1.00	0.00
Renting of machinery and equipment without operator and of personal and household goods (71)	0.23	0.77

Computer and related activities (72)	0.33	0.67
Research and development (73)	0.53	0.47
Other businesses activities (74)	0.93	0.07
<hr/> Total	<hr/> 0.57	<hr/> 0.43

Note : The proportions refer to the weighted sample.

¹ CA means collective (wage) agreement.

Appendix 5: Bargaining Regimes and Inter-Industry Wage Differentials

<i>Industry (Nace 3-digit)</i>	<i>Bargaining regime¹ :</i>	
	<i>(i)</i> <i>Only national and/or sectoral CA</i>	<i>(ii)</i> <i>Company CA</i>
Quarrying of stone (141)	0,053	-0,115
Quarrying of sand and clay (142)	0,023	0,071
Mining of chemical and fertiliser minerals (143)	-0,048	/
Other mining and quarrying n.e.c. (145)	-0,149	-0,099
Production, processing and preserving of meat and meat products (151)	-0,002	-0,098
Processing and preserving of fish and fish products (152)	-0,036	/
Processing and preserving of fruit and vegetables (153)	-0,056	-0,131
Manufacture of vegetable and animal oils and fats (154)	0,130	-0,001
Manufacture of dairy products (155)	0,024	-0,015
Manufacture of grain mill products, starches and starch products (156)	0,043	0,012
Manufacture of prepared animal feeds (157)	0,097	-0,054
Manufacture of other food products (158)	-0,047	0,047
Manufacture of beverages (159)	-0,021	-0,047
Manufacture of tobacco product (160)	0,026	0,026
Preparation and spinning of textile fibres (171)	-0,043	-0,147
Textile weaving (172)	-0,039	-0,074
Finishing of textiles (173)	-0,105	/
Manufacture of made-up textile articles, except apparel (174)	-0,105	-0,112
Manufacture of other textiles (175)	-0,036	0,003
Manufacture of knitted and crocheted fabrics (176)	-0,073	/
Manufacture of knitted and crocheted articles (177)	-0,245	-0,264
Manufacture of other wearing apparel and accessories (182)	-0,110	-0,060
Dressing and dyeing of fur; manufacture of articles of fur (183)	-0,140	/
Tanning and dressing of leather (191)	-0,077	-0,271
Manufacture of luggage, handbags and the like, saddlery and harness (192)	0,040	/
Manufacture of footwear (193)	-0,052	/
Sawmilling and planing of wood, impregnation of wood (201)	-0,019	/
Manufacture of veneer sheets; manufacture of plywood, laminboard, particle board, fibre board and other panels and boards (202)	0,026	-0,064
Manufacture of builders' carpentry and joinery (203)	-0,044	-0,031
Manufacture of wooden containers (204)	0,052	-0,144
Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials (205)	-0,049	/
Manufacture of pulp, paper and paperboard (211)	0,086	0,212
Manufacture of articles of paper and paperboard (212)	-0,009	0,009
Publishing (221)	0,045	0,016
Printing and service activities related to printing (222)	0,106	0,085
Manufacture of coke oven products (231)	/	0,071
Manufacture of refined petroleum products (232)	0,308	0,148
Processing of nuclear fuel (233)	0,067	0,037
Manufacture of basic chemicals (241)	0,094	0,145
Manufacture of pesticides and other agro-chemical products (242)	0,198	0,130
Manufacture of paints, varnishes and similar coatings, printing ink and mastics (243)	0,117	0,035
Manufacture of pharmaceuticals, medicinal chemicals and botanical product (244)	-0,003	0,023
Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations (245)	-0,048	-0,048
Manufacture of other chemical products (246)	0,073	0,110
Manufacture of man-made fibres (247)	0,050	-0,009

Manufacture of rubber products (251)	-0,018	-0,034
Manufacture of plastic products (252)	0,032	-0,020
Manufacture of glass and glass products (261)	-0,093	0,031
Manufacture of non-refractory ceramic goods other than for construction purposes; manufacture of refractory ceramic products (262)	0,142	0,010
Manufacture of ceramic tiles and flags (263)	-0,033	-0,015
Manufacture of bricks, tiles and construction products, in baked clay (264)	-0,080	0,018
Manufacture of cement, lime and plaster (265)	0,217	0,146
Manufacture of articles of concrete, plaster and cement (266)	0,048	-0,066
Cutting, shaping and finishing of stone (267)	0,019	/
Manufacture of other non-metallic mineral products (268)	/	0,133
Manufacture of basic iron and steel and of ferro-alloys (ECSC) (271)	/	-0,023
Other first processing of iron and steel and production of non-ECSC ferro-alloys (273)	-0,027	0,024
Manufacture of basic precious and non-ferrous metals (274)	0,159	0,053
Casting of metals (275)	-0,062	-0,016
Manufacture of structural metal products (281)	0,010	-0,047
Manufacture of tanks, reservoirs and containers of metal; manufacture of central heating radiators and boilers (282)	0,015	-0,037
Manufacture of steam generators, except central heating hot water boilers (283)	0,011	-0,061
Forging, pressing, stamping and roll forming of metal; powder metallurgy (284)	0,103	0,028
Treatment and coating of metals; general mechanical engineering (285)	0,015	-0,029
Manufacture of cutlery, tools and general hardware (286)	0,048	-0,095
Manufacture of other fabricated metal products (287)	0,017	-0,014
Manufacture of machinery for the production and use of mechanical power, except aircraft, vehicle and cycle engines (291)	0,082	-0,016
Manufacture of other general purpose machinery (292)	-0,029	-0,083
Manufacture of agricultural and forestry machinery (293)	-0,055	-0,065
Manufacture of machine-tools (294)	0,005	-0,052
Manufacture of other special purpose machinery (295)	-0,022	-0,089
Manufacture of weapons and ammunition (296)	-0,011	0,119
Manufacture of domestic appliances n.e.c. (297)	-0,159	-0,118
Manufacture of office machinery and computers (300)	0,016	/
Manufacture of electric motors, generators and transformers (311)	/	-0,054
Manufacture of electricity distribution and control apparatus (312)	0,034	-0,091
Manufacture of insulated wire and cable (313)	0,046	0,055
Manufacture of accumulators, primary cells and primary batteries (314)	-0,084	0,038
Manufacture of lighting equipment and electric lamps (315)	0,022	-0,054
Manufacture of electrical equipment n.e.c. (316)	-0,045	-0,112
Manufacture of electronic valves and tubes and other electronic components (321)	0,009	0,008
Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy (322)	0,114	-0,035
Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods (323)	-0,033	-0,135
Manufacture of medical and surgical equipment and orthopaedic appliances (331)	-0,069	0,066
Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment (332)	0,124	0,051
Manufacture of industrial process control equipment (333)	0,111	-0,100
Manufacture of optical instruments and photographic equipment (334)	-0,075	-0,198
Manufacture of watches and clocks (335)	-0,086	/
Manufacture of motor vehicles (341)	-0,066	-0,041

Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers (342)	-0,047	-0,108
Manufacture of parts and accessories for motor vehicles and their engines (343)	0,069	-0,088
Building and repairing of ships and boats (351)	0,017	0,033
Manufacture of railway and tramway locomotives and rolling stock (352)	0,023	/
Manufacture of aircraft and spacecraft (353)	0,045	0,052
Manufacture of motorcycles and bicycles (354)	0,072	-0,093
Manufacture of other transport equipment n.e.c. (355)	/	-0,080
Manufacture of furniture (361)	-0,041	-0,083
Manufacture of jewellery and related articles (362)	-0,176	-0,169
Manufacture of musical instruments (363)	-0,010	/
Manufacture of sports goods (364)	-0,095	/
Manufacture of games and toys (365)	-0,264	-0,017
Miscellaneous manufacturing n.e.c (366)	/	-0,126
Recycling of metal waste and scrap (371)	0,145	0,151
Recycling of non-metal waste and scrap (372)	-0,076	/
Production and distribution of electricity (401)	0,257	/
Manufacture of gas; distribution of gaseous fuels through mains (402)	0,326	0,419
Collection, purification and distribution of water (410)	/	/
Site preparation (451)	0,020	-0,068
Building of complete constructions or parts thereof; civil engineering (452)	0,033	-0,023
Building installation (453)	-0,021	-0,099
Building completion (454)	0,014	0,037
Renting of construction or demolition equipment with operator (455)	0,108	/
Sale of motor vehicles (501)	0,067	-0,007
Maintenance and repair of motor vehicles (502)	-0,039	-0,056
Sale of motor vehicle parts and accessories (503)	-0,080	-0,129
Sale, maintenance and repair of motorcycles and related parts and accessories (504)	/	/
Retail sale of automotive fuel (505)	-0,017	-0,140
Wholesale on a fee or contract basis (511)	0,093	/
Wholesale of agricultural raw materials and live animals (512)	0,071	-0,117
Wholesale of food, beverages and tobacco (513)	-0,051	-0,102
Wholesale of household goods (514)	0,005	-0,049
Wholesale of non-agricultural intermediate products, waste and scrap (515)	0,016	0,073
Wholesale of machinery, equipment and supplies (516)	0,042	-0,069
Other wholesale (517)	-0,063	/
Retail sale in non-specialised stores (521)	-0,156	-0,073
Retail sale of food, beverages and tobacco in specialised stores (522)	-0,157	-0,275
Retail sale of pharmaceutical and medical goods, cosmetic and toilet articles (523)	-0,011	-0,082
Other retail sale of new goods in specialised store (524)	-0,132	-0,128
Retail sale of second-hand goods in stores (525)	-0,206	/
Retail sale not in stores (526)	-0,070	0,162
Repair of personal and household goods (527)	/	-0,142
Hotels (551)	-0,116	-0,239
Camping sites and other provision of short-stay accommodation (552)	-0,201	0,071
Restaurants (553)	-0,135	-0,255
Bars (554)	-0,090	-0,220
Canteens and catering (555)	-0,130	-0,110
Transport via railways (601)	/	/
Other land transport (602)	-0,037	-0,117
Sea and coastal water transport (611)	0,129	0,267

Inland water transport (612)	0,246	/
Scheduled air transport (621)	/	0,107
Non-scheduled air transport (622)	0,090	/
Space transport (623)	0,053	/
Cargo handling and storage (631)	0,126	0,074
Other supporting transport activities (632)	-0,088	/
Activities of travel agencies and tour operators; tourist assistance activities n.e.c. (633)	-0,162	-0,047
Activities of other transport agencies (634)	0,076	0,016
Post and courier activities (641)	-0,103	/
Telecommunications (642)	0,403	0,096
Monetary intermediation (651)	0,145	0,115
Other financial intermediation (652)	0,127	-0,045
Insurance and pension funding, except compulsory social security (660)	0,127	0,046
Activities auxiliary to financial intermediation, except insurance and pension funding (671)	0,624	/
Activities auxiliary to insurance and pension funding (672)	0,010	0,022
Real estate activities with own property (701)	0,063	/
Letting of own property (702)	/	/
Real estate activities on a fee or contract basis (703)	-0,005	/
Renting of automobiles (711)	0,048	-0,040
Renting of other transport equipment (712)	0,021	-0,025
Renting of other machinery and equipment (713)	/	-0,039
Renting of personal and household goods n.e.c. (714)	-0,290	-0,262
Hardware consultancy (721)	0,113	0,019
Software consultancy and supply (722)	-0,027	0,001
Data processing (723)	0,126	/
Data base activities (724)	-0,115	0,302
Maintenance and repair of office, accounting and computing machinery (725)	-0,086	/
Other computer related activities (726)	/	/
Research and experimental development on natural sciences and engineering (731)	0,063	0,052
Research and experimental development on social sciences and humanities (732)	-0,201	/
Legal, accounting, book-keeping and auditing activities; tax consultancy; market research and public opinion polling; business and management consultancy; holdings (741)	0,092	0,088
Architectural and engineering activities and related technical consultancy (742)	0,025	-0,031
Technical testing and analysis (743)	0,103	0,074
Advertising (744)	0,026	-0,258
Labour recruitment and provision of personnel (745)	-0,086	0,216
Investigation and security activities (746)	-0,111	/
Industrial cleaning (747)	-0,022	-0,033
Miscellaneous business activities n.e.c (748)	-0,033	-0,144
R ² adjusted	0,725	0,695
F-test relative to the estimated relation	6888	5132
F-test relative to the sectoral dummies	523	490
Weighted adjusted standard deviation of the inter-industry differentials (d _k)	0,095	0,090
Number of sectors	163	139
Number of observations in the sample	34774	26806

Notes : ¹ CA means collective (wage) agreement. All estimates are significant at the level of 5%, except those in bold. They were estimated from a wage equation including the vector *X* (individual characteristics and working conditions), *Y* (sectoral dummies, Nace 3-digit) and *Z* (size of the establishments). For more details regarding the explanatory variables, see section 3.

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