

**The determination of wages of newly hired employees:
Survey evidence on internal versus external factors¹**

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Abstract

This paper analyses the relative importance of internal versus external factors in the setting of wages of newly hired workers. It uses evidence from a rich survey on wage setting procedures, in around 13,000 firms in 14 European countries. The survey also enquires about the reasons for which firms do not deviate from the going wage. The paper investigates how the relative importance of internal and external factors depends on country, sector and firm-specific characteristics. The results suggest that in many European countries where collective wage agreements are still dominant internal factors including the collective agreement itself are important. However, firms that face more competitive conditions and employ high-skilled workers are more likely to be responsive to external market conditions. Both the fairness and the shirking version of the efficiency wage hypothesis are supported by the findings.

Keywords: newly hired employees; wage rigidity

JEL Classification: C25; J31; J41; J64

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1. Introduction and motivation

Shimer (2005) and Hall (2005) illustrate the failure of standard labour market search models to match business cycle fluctuations in employment and vacancies. Shimer (2005) shows that for reasonable calibrations period-by-period Nash bargaining over the wage leads wages to respond strongly to technology shocks, dampening the effect of such shocks on expected profits and therefore on vacancy creation. As a result, wages are typically too volatile and employment not volatile enough. Hall (2005) argues that wage rigidity in the form of a “wage norm” may explain why wages are not adjusted as regularly as suggested by the search models resulting in more volatile employment. Nominal wage stickiness has been used in a number of papers to improve the empirical performance of labour market models with search frictions. For example, recently Gertler, Sala and Trigari (2007) estimate a medium-scale macroeconomic model that allows for unemployment and staggered nominal wage contracting and find that wage rigidity provides a better description of the data and the business cycle facts than does a flexible wage version (see also Costain and Reiter, 2005; Gertler and Trigari, 2006; de Walque *et al.*, 2007; Blanchard and Galí, 2008; Christoffel *et al.*, 2008).²

Given the sluggishness of wages both at the aggregate and at the individual level, wage stickiness has an intuitive appeal. However, Pissarides (2007) and Haefke, Sonntag and van Rens (2007) emphasise that what matters for employment decisions is not the behaviour of aggregate wages, but the wages of newly hired workers. Most of the macro literature mentioned above assumes that the wages of new hires are constrained to be the same as those of workers in existing wage contracts.³ Evidence on the determinants of wages of new hires, including their responsiveness to cyclical conditions, is, however, scant. Most individual-level panel data on wages document wage stickiness in ongoing employment relationships (e.g. Bils, 1985; Solon, Barsky and Parker, 1994; Beaudry and DiNardo, 1991). Ten years ago, Bewley (1999) claimed that “there is little statistical data on the pay of new hires”. More recently, Haefke *et al.* (2007) use micro-data on earnings and hours worked from the Current Population Survey

² See Christoffel *et al.* (2008) for a systematic overview of how introducing wage rigidity in a New Keynesian model with labour market search frictions affects the impulse responses to various shocks.

³ An interesting exception is de Walque, Pierrard, Sneessens and Wouters (2008). They discriminate between wage stickiness for new and for existing employees and using a sequential bargaining framework find that there is quite a bit of interaction between the two.

(CPS) outgoing rotation groups for the US to construct a quarterly time series for wages of new hires. They find that the wage for newly hired workers is much more volatile than the aggregate wage and responds one to one to productivity. In contrast, wages for ongoing job relationships are rigid over the business cycle, consistent with models of implicit wage contracts. Similarly, Pissarides (2007) reviews the recent micro literature and concludes that the elasticity of wages of new hires with respect to a change in the unemployment rate is quite high: a one percentage point rise in the unemployment rate is associated with wages for new matches that are around 3 percent lower.⁴ Moreover, he shows that this cyclical nature of wages in new matches is in the same ballpark as the one in the simple wage equation derived in the canonical Mortensen-Pissarides model. The work referred to by Pissarides (2007) is mostly for the United States. For Europe evidence is scarcer. However, using detailed Portuguese micro data Carneiro *et al.* (2008) find that the wages of new hires in Portugal is also significantly more procyclical. Peng and Siebert (2006, 2007) study real wage cyclical nature in Italy, Germany and the UK using panel data distinguishing between movers and stayers and find that in general in the 3 countries the wages of stayers are procyclical but in the UK and Germany the wages of movers were not more so. They also find, however, that in certain regions in Italy (South) and Germany (East) wages of both groups are not pro-cyclical suggesting that the impact of the type of bargaining arrangements and institutions on the flexibility or otherwise of wages depends on interactions between institutional features and economic performance.

However, because of the likelihood of important composition biases, the micro-economic studies may not yet be conclusive. Workers and jobs are heterogeneous and newly hired workers may not be a representative subsample of the whole labour force. Haefke *et al.* (2007) observe that new hires have lower than average wages, which may be consistent with a larger fraction of poorly educated and less-experienced among the new hires.⁵ To the extent that these workers are affected more by cyclical conditions (see, for example, Bils, 1985; Solon, Barsky and Parker, 1994) estimates of cyclical nature may be biased upwards. Furthermore, the jobs that are created in recessions and booms may be different. For

⁴ A summary of the empirical evidence on the cyclical nature of hourly wages in the United States is given in Table 4 of Pissarides (2007, p.22).

⁵ The composition bias may also work in favour of finding cyclical nature. For example, Solon, Barsky and Parker (1994) show that, in a recession, firms hire on average more skilled workers than in a boom. Since more skilled workers are more productive this drives up wages in a recession. This may explain why it is generally more difficult to find cyclical nature in aggregate data.

example, there is some evidence that matches created in a boom pay higher wages and last longer than matches created in a recession (Beaudry and DiNardo, 1991; Davis, Haltiwanger and Schuh, 1996a). If this is the case, then the wages of newly hired workers appear more procyclical than they are, because workers hired in booms receive higher wages not just because aggregate productivity has risen, but also because they are in a permanently better match. Moreover, it is possible that new hires are disproportionately likely to be in a few high-turnover, flexible-wage industries like restaurants. Haefke *et al.* (2007) and Carneiro *et al.* (2008) control for worker characteristics and find that the result of the greater cyclicalities of the wages of new hires survives. However, using data from the CPS, Gertler, Huckley and Trigari (2008), find that the evidence that wages of new workers are more flexible disappears when controlling for worker and job characteristics.

Additional evidence on the determination of wages of new hires can be retrieved from surveys. Based on structured interviews with labour market participants in New England in the 1980s, Bewley (1999, 2008) distinguishes between the primary and the secondary sectors of the labour market. Primary sector employment is long-term and full-time, while that in the secondary sector is just the opposite. According to Bewley's (1999) survey evidence, in the primary sector the pay of new hires is closely tied to the internal pay structure. The main reason for having an internal structure is to achieve a sense of equity or fairness within the firm. New employees may become disgruntled when they discover that they are paid according to a lower progression scale than co-workers hired earlier. Similarly, paying higher wages to new employees can cause trouble because it arouses the jealousy and resentment of all existing employees. Good morale is important because it affects productivity, labour turnover and the ability to hire good quality employees. In contrast, in the secondary sector, the pay of new hires tends to be market determined and to fall readily in a slack labour market. For Europe, some survey evidence is available for Sweden (Agell and Lundborg, 1995, 2003; Agell and Bennmarker, 2007). Focusing on recessions, they find evidence of significant underbidding during the crisis of the early 1990s, especially among white collar workers, but fewer indications of such behaviour in 1998, despite the persistently high unemployment rate.

There are several reasons why firms may find it optimal not to differentiate the wages of newly hired workers from those of existing workers. Gertler, Sala and Trigari (2007) appeal to scale economies in bargaining to rule out separate

negotiations for workers who arrive in between contracting periods. As discussed above, Bewley (1999) argues that internal equity and fairness constrains workers of similar productivity to receive similar wages. Menzio and Moen (2006) show how the trade-off between efficient provision of insurance to senior workers and efficient recruitment of junior ones links the wages of new and existing workers in response to small and negative productivity shocks. Finally, to the extent that the wage of co-workers (either new or incumbent workers) is seen as a wage norm, downward deviations from this norm may lead to shirking and affect effort negatively.

In this paper we examine new survey evidence on factors that affect the wages of new hires. The survey has been conducted in around 17,000 firms in 15 European countries. The main question, in this paper, distinguishes between three main factors: an *institutional factor*, i.e. the existence of a collective wage agreement; an *internal factor*, i.e. the wage of similar employees in the firm; and an *external factor*, i.e. the wage and the availability of similar workers in the local labour market. The focus in this paper is on the institutional and the external factors. In addition, in a number of these European countries, the survey also asks firms whether they would pay newly hired workers significantly lower or higher wages, than those paid to similar employees already in the firm, depending on the state of the local labour market, and, if not, to indicate the main reasons for not differentiating wages in this way. Here the survey distinguishes between four arguments: fairness; the efficiency wage effort argument; labour regulations and collective pay agreements, and union pressure. The first two arguments are decisions made on the employers' side indicating that wages can have an impact on profits, while the latter two arguments could be thought of as proxies of insider power.

This new European survey evidence is important for a number of reasons. First, most of the existing literature on the wages of newly hired individuals focuses on the United States. However, the institutional characteristics of the US labour market in terms of union coverage, employment protection, unemployment insurance and collective bargaining are quite different from those in most European Union countries.⁶ These institutional and cultural cross-country differences are likely to have an impact on whether firms find it optimal to differentiate between wages of newly hired and incumbent workers. Second,

⁶ See Du Caju *et al.* (2008) for a recent overview of collective wage bargaining institutions in European countries.

asking firms directly about the wages of new hires relative to those of existing workers is likely to alleviate the composition bias that plagues micro panel studies. Third, the survey data allow us to control for a number of factors that may otherwise be difficult to measure such as the degree of competition the firm is facing, the skill composition of its workforce, the incidence of performance related pay, the average tenure in the firm, etc. Finally, the survey methodology permits us to ask directly about the main reasons for which firms do not want even under different labour market circumstances to differentiate between wages of newly hired employees and similar incumbents.

In the rest of this paper, we first, in Section 2, describe the survey-based data set. The survey data were collected by each of 15 European Union central banks using a partly harmonized questionnaire developed by the Wage Dynamics Network (WDN). Section 3 reports some basic statistics regarding the main question on the factors determining the wages of newly hired workers. We document similarities and differences across countries, sectors and firms and relate some of those differences to certain firm features and institutional characteristics. Section 4 looks at the attitude of firms towards entrants' wages when faced with specific labour market conditions, while Section 5 focuses on the reasons for which firms do not want to differentiate between wages of similar workers. This analysis is limited to a subset of 7 countries. Section 6 presents a multivariate probit analysis on the relative importance of internal versus external factors. Finally, Section 7 concludes. Overall, we find that in a large majority of the firms collective pay agreements or the internal pay structure of the firm are the most important determinants of wages of newly hired employees. The role of the collective agreement depends, of course, on the institutional bargaining environment of the country. Collective agreements are very important in most euro area countries, while they are less important in the new EU member states. However, even in the latter countries the internal pay structure is typically more important than external labour market conditions. The main reasons for which firms do not want to deviate from the internal pay structure when setting wages of new hires is twofold. Firms fear that this will negatively affect the effort of employees receiving lower wages. Many firms also put a lot of emphasis on fairness as an important reason for not differentiating wages. Firms that emphasise the role of external conditions typically employ more high-skilled workers, have a workforce with a lower average tenure and use performance-related variable pay to a larger extent. They also typically work in a more competitive environment. Finally, we find some evidence that firms are more

willing to increase wages when labour market conditions are tight, than to lower wages when there is slack.

2. The survey data used

The data used in this paper are drawn from surveys on wage and price setting procedures conducted in 15 European Union countries during approximately the same time period using a more or less harmonized questionnaire.⁷ The questionnaire was developed by the participants of the survey group of the Wage Dynamics Network (WDN), a Eurosystem Research Network studying wage and labour cost dynamics in the euro area and the European Union and the implications of these for monetary policy.

The dataset consists of observations from 17,116 firms from 15 European Union countries.⁸ The surveys were conducted in the period between the summer of 2007 and spring 2008. The sampling unit was the firm and, in most countries, the sampling frame covered firms with over 5 employees in the non-financial business sector.⁹ In most countries, the samples were chosen by stratified random sampling, and the data collection was done either by post or through a web-based application. Table A.2.1 in the Appendix provides details on the sample composition (number of firms by country and by broad sector of economic activity).

The sample of data used in the current version of the paper includes data from some 13,000 firms. The difference in size from the larger dataset is due to: (a) the fact that Germany has not yet been included in the pooled data set (will be added in a subsequent version of the paper), (b) the exclusion of firms with fewer than 5 employees, (c) the elimination of firms from the *energy sector*, because only very few firms are active in the sector and in most instances these firms are under state control, the exclusion of firms from the financial and the construction sectors in order to homogenize the sample further because these sectors were not included by all countries in their sampling frame. Furthermore, the sample is

⁷ A copy of the core part of the questionnaire common to all countries is attached.

⁸ The 15 countries are: Austria, Belgium, Czech Republic, Estonia, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Portugal, Slovenia and Spain. Data from the surveys conducted in Lithuania and Luxembourg may be added at a later stage.

⁹ A few countries (e.g. Czech Republic, Italy) only targeted firms with over 20 employees, although for Italy, the realised sample contains a few firms with less than 20 employees. In Germany and Greece the realised sample also includes firms with less than 5 employees.

further restricted due to missing observations and outliers in the variables of interest.

The main variables of interest for this paper arise from the following three questions:

I. Considering the main occupational group in your firm please choose a single option to indicate the most relevant factor in determining the entry wage of newly hired employees:

- a. Collective pay agreement (independently of the level at which this is signed)
- b. Wage of similar employees in the firm
- c. Wage of similar employees outside the firm
- d. Availability of workers with similar characteristics in the labour market
- e. Other reasons

II. If there is abundance in the labour market in terms of the workers you are seeking to hire, do you pay newly hired employees a significantly lower wage than that paid to individuals with similar qualifications and experience already employed in the firm?

- a. Yes
- b. No, because
 - i. This would be perceived as unfair and earn the firm a bad reputation
 - ii. This would impact negatively on the work effort of the new employees
 - iii. This is prevented by labour regulation or the collective pay agreement
 - iv. Unions would contest such action
 - v. Due to other reasons

III. If there is a shortage in the labour market of workers you need to hire, and you have difficulty in attracting new workers, do you give newly hired employees a significantly higher wage than that paid to similarly qualified employees already in the firm?

- a. Yes
- b. No, because
 - i. This would be perceived as unfair by existing employees

- ii. This would have a negative effect on the work effort of existing employees
- iii. This is prevented by labour regulation or the collective pay agreement
- iv. This would generate pressure by existing employees for wage increases
- v. Due to other reasons

As already mentioned, Question I was asked in all countries, Questions II and III, however, were only asked in 7 countries: the Czech Republic, Estonia, Greece, Hungary, Italy, Poland and Slovenia.

Inevitably, due to the differences in the institutional framework and the practices followed in different countries, the questions were not asked in exactly the same way in all countries. An effort, however, has been made to harmonise the replies. Deviations from the harmonised questionnaire in specific questions of interest to this paper and the harmonisation process followed are highlighted in Section A1 of the Appendix. The next section takes a first look at the information collected.

3. Determinants of entry wages: descriptive statistics

This section reports sample statistics on the factors determining the wages of newly hired workers. It documents similarities and differences across countries, across sectors and across firms depending on a number of firm characteristics (e.g. size, workforce composition, pay structure, etc), and the environment in which these operate (e.g. intensity of competition).

3.1 Cross-country comparisons of the determinants of entry wages: the importance of labour market institutions

Table 3.1 presents the percentage of firms selecting each one of the 5 options to Question I. The table is divided into two panels; Panel A looks at countries in which firms select a single option in Question I, while Panel B looks at countries in which firms score the various options. The table also shows some information on labour market institutions: (a) the level of coverage by collective pay agreements, (b) the typical level at which collective bargaining takes place, and (c) the OECD Employment Protection Legislation Index (EPL). The first two

indicators are derived from a questionnaire filled in by the central banks participating in the Wage Dynamics Network (WDN). A discussion of the findings can be found in Du Caju *et al.* (2008), while more information on the specific indicators presented here is provided in the Appendix to this paper.

Table 3.1 shows substantial cross-country variation in the importance given to the different factors. However, a number of conclusions can be drawn. First, in all countries, with the exception of Spain, Italy and Greece,¹⁰ the wage of similar employees in the firm is indicated as the most important determinant (or gets the highest score) of the wage of new entrants by the highest percentage of firms.¹¹ Second, in Spain, Italy and Greece, the most relevant factor is the *collective agreement* in force (with a percentage of firms higher than 70% in Spain). At the other end of the spectrum, less than 5% of firms in Estonia and Hungary reply that a collective agreement is the most important factor in determining the wages of new entrants. As a result, external factors (options c and d of Question I) gain, in general, less support than “internal factors” (columns 6 and 7 of Table 1). There is, however, substantial cross-country variation with only 4% of the firms in Spain reporting external factors as important in determining the wages of new entrants, while the scores on these options appear relatively high in Poland and France (Panel B).¹²

The results shown in Table 3.1 clearly reflect differences in labour market institutions. Overall, and not surprisingly, firms in countries where there is more individual rather than collective bargaining (e.g. Estonia and Hungary) are not likely to declare a collective agreement as being important in determining entry wages. The same is true in countries where *company level* bargaining is typical, but the level of coverage by the collective agreement is low or medium (e.g. Czech Republic) and/or extension procedures do not exist.¹³ On the other hand, when collective agreements are signed at a level higher than the company, and coverage is high then the collective agreement is likely to have a significant

¹⁰ The data for Greece in Table 3.1 should be treated with caution since, as explained in the Appendix, Question I was asked in a different way.

¹¹ As mentioned in the Appendix, Austria distinguishes according to whether the wage to be paid to new entrants is compared with the “Current wage of similar employees” or with the “Entry wage of similar employees”. The percentage of firms selecting each one of these options is approximately the same.

¹² Note, however, that the conclusions to be drawn from Panel B are not completely comparable to those reached from Panel A since the latter countries choose one option, whereas the former countries score all options.

¹³ Information on whether extension procedures, whereby an agreement made by some parties (e.g. certain firms and unions in a sector) extends to more workers than those directly involved in signing the agreement, from Du Caju *et al.* (2008) is presented in Table A.7.1 in the Appendix.

influence on the wages of newly hired workers. The relative power of insider workers is also likely to determine whether external labour market conditions influence the wage determination process of new entrants. The OECD Employment Protection Legislation (EPL) Index can be seen as one measure of insider power. High employment protection increases the power of insiders and makes them more likely to protest against newly hired workers being paid a higher wage. Similarly, if insiders fear being replaced by outsiders, they are also likely to protest against a lower wage being paid to outsiders. In fact, the correlation between the EPL index and the percentage of firms having replied that the collective agreement is of importance is positive, while that between the percentage of firms replying that external factors are important and the EPL index is negative.

Two countries which at first sight might not fit so well with the reasoning above are France and Ireland. In France, despite the fact that the coverage by collective pay agreements is high and the OECD EPL index is among the highest, firms do pay considerable attention to external labour market conditions (witness the relatively high score assigned to external factors by French firms). This result could perhaps be a matter of the prevailing economic conditions at the time of the survey, since we observe that a very high percentage of firms in France report that they have cut base wages (in nominal terms) in the last few years.¹⁴ For Ireland, on the other hand, it is interesting to see that the collective agreements are not considered important despite the fact that bargaining is conducted at the national level, and procedures are automatically extended to all workers (see Table A.7.1). In Poland, the high score assigned to external factors might be linked to the persistently high unemployment rate (see Table A.7.2 in the Appendix for unemployment rate data).

In conclusion, Table 3.1 suggests that a relatively higher importance is assigned to external factors in countries with a low coverage of collective pay agreements, and where either collective bargaining is prevalent at the company level or individual level bargaining is more common. The data in column 7 of Table 3.1 together with the information in the last column also show that external factors are relatively more important in countries with less employment protection as measured by the EPL index.

¹⁴ The data on the percentage of firms reporting they did cut wages in the last 5 years is presented in the Appendix (see Table A.2.6).

3.2 The determinants of entry wages: Differences across sectors and firm and workforce characteristics

We would expect that even within the same country firms in different sectors and with different performance and workforce characteristics might have a different attitude towards the determination of the wages of entrants. In this section, we investigate some of those differences.

Table 3.2 focuses on differences across sectors and across firms of different size and age.¹⁵ Differences across sectors could, for example, arise from institutional factors such as different bargaining arrangements, and from factors that determine the relative bargaining power between the union and the employer (e.g. the elasticity of demand for the firms' products, the importance of job-specific training or more generally the degree of labour turnover). Discrepancies with respect to size could also result from institutional factors. For example, according to OECD (2008) employment protection is lower in small firms in France, Germany, Italy and Portugal. Moreover, small firms are less likely to have a collective agreement. Alternatively, as noted by Davis, Haltiwanger and Schuh (1996b), the process of job creation and job destruction differs by firm size. Furthermore, the relevance of the shirking version of an efficiency wage model is likely to be more applicable in larger firms, where the monitoring of effort is more difficult, than in smaller firms.

Table 3.2 presents the percentage of firms selecting options c or d in Question I, or, in other words, the percentage of firms who assign importance to external labour market conditions when deciding the wages of new entrants. The first three columns of the Table suggest that external factors are more important in the trade and business services sector than in manufacturing. This is consistent with the fact that trade union coverage is higher in manufacturing than in the services sector, and with the observation that job turnover is lower in manufacturing than in the other two sectors. One would expect that in firms that have longer-term relationships with their employees, the wages of new hires are less influenced by short-run developments in the labour market. It is interesting, however, to note that in the three countries of panel B, there is no clear edge for external factors in the services sector.

¹⁵ The individual-country data corresponding to Tables 3.2-3.4 are presented in Tables A.3.1-A.3.6 in the Appendix.

The size and the age of the firm also appear to make a difference with respect to the importance given to external factors in the hiring process. More specifically, smaller firms take external factors into account to a greater extent than larger firms (see columns 4 and 5 of Table 3.2). This is consistent with the limited relevance of EPL in small firms (see, OECD, 2008; Peng and Siebert, 2007), with the increasing importance of coverage with firm size, and with the greater importance of efficiency wage considerations and internal structures in large firms. Finally, as expected, firms established more recently appear to be more heavily influenced by external labour market conditions.

Next, Table 3.3 focuses on some features of the environment in which firms operate such as the degree of competition (international or domestic) and their current business conditions (e.g. their relative sales performance and the incidence of wage freezes). Typically, firms that consider external labour market conditions as important are more open (column 1), and operate in a more competitive environment (columns 2 and 3 of Table 3.3), although statistical significance at the individual country level is difficult to find (Table A.3.3). It thus seems that competition in the product market induces firms to pay more attention to external labour market conditions in the setting of the wages of new hires. Column 4 of Table 3.3 also suggests that firms that take external labour market conditions into account have on average experienced a more favourable business environment. At the same time, they also are more likely to have kept wages flat in nominal terms (column 5).

Finally, Table 3.4 focuses on some of the firms' workforce characteristics. The figures confirm that external factors are more important when there is no collective pay agreement at any level. Second, there appears to be some difference in the share of labour costs in total costs between firms that emphasise external factors and those that do not, as well as in the extent to which part of the wage bill is linked to firm-level or individual performance. Third, firms that emphasise external factors appear to have a higher share of skilled workers (both white-collar and blue-collar) in their work force. Fourth, the turnover of the workforce as captured by its average tenure is lower in firms emphasising external factors. The table also reports the gross flow of workers in both types of firms. If this was a structural indicator, we would expect it to have the opposite correlation from tenure (the higher the gross flow, the lower the tenure of the workforce). It seems here, however, that as with tenure firms which take external labour market conditions into account exhibit, in general, lower gross flows. This

being an unconditional result it is difficult to conclude what is driving it, but it could be capturing both a structural feature (e.g. firms operating in seasonal industries) as well as some cyclical variation.

Overall, the results of this section suggest that the importance of external labour market conditions in the determination of the wages of new hires is related to labour market institutions such as collective wage bargaining and employment protection. Differences within countries that are related to the firm's operating environment and its workforce features. Small firms, firms operating in an environment with more intense competition, firms with a high share of skilled workers and firms where pay is linked to performance appear to be more responsive to external labour market conditions. In Section 6, we investigate which of those covariates remain significant in a multivariate analysis.

4. Asymmetries in the role of external labour market conditions.

In this section, we analyse the replies to the first option of Questions II and III, presented in Section 2 above. This allows us to investigate whether external labour market conditions affect entrants' wages differently in different states of the labour market. As discussed above, the analysis is restricted to seven countries.

Table 4.1 reports the percentage of firms in each country prepared to pay a lower or a higher wage respectively to new entrants. A few observations are worth mentioning. First, the percentage of firms that are willing to pay new entrants a wage *lower* than that paid to similar incumbents varies from a low of around 5% in Slovenia to a high of 17% in Estonia, while the percentage of firms who indicate that they would be prepared to pay a *higher* wage to new entrants varies from a low of 4% in Poland to a high of 23% in Italy. In general, there appears to be a positive cross-country correlation between the replies to the two questions, suggesting that some countries are more flexible than others. Second, there is some evidence of asymmetry with respect to the business cycle. The percentage of firms who state they would pay a higher wage when the labour market is tight is in all countries, with the exception of Poland,¹⁶ higher than the percentage of firms that would pay a lower wage when there is high unemployment.

¹⁶ The differences are marginal in the cases of Estonia and Slovenia.

The positive and statistically significant correlation between the replies is due to the high number of firms which declare that they would not pay either a higher or a lower wage (75.4% of the firms who have replied to both questions). The percentage of firms that would consider paying both a higher and a lower wage is just 3.9% of all the firms that replied to the question. Amongst the firms that would not be prepared to pay a lower wage around 14% declare that they would consider paying a higher wage. Among the firms that would not consider paying a higher wage, around 12% might pay a lower wage. The result for Poland, where more firms would be willing to pay a lower wage rather than a higher wage, could be due to the persistently high unemployment rate indicating that firms have not recently been faced with a shortage of applicants (Table A.7.2 in the Appendix presents standardised unemployment rates for the survey countries for the period 1990-2007).

Table 4.2 checks the consistency of these results with the replies to Question I. It confirms that firms that attach more importance to external factors in Question I are also more likely to differentiate wages of new hires from the internal going wage depending on the state of local labour market conditions.

Furthermore, we find that the share of firms differentiating wages of new hires depending on local labour market conditions differs across sectors and a number of other firm-specific covariates.¹⁷ First, confirming the results in Table 3.2, it appears that firms in the services sector (trade and business services) show, in general, greater flexibility than firms in the manufacturing sector, although statistical significance is difficult to find. Similarly, small firms are in general, on the one hand, more likely to pay a lower wage than larger firms, but, on the other hand, are less likely to pay a higher wage than bigger firms. Finally, firms that have been established for a while (old firms) appear more willing to stick to the going rate. In addition, firms willing to pay a higher wage appear to be more export oriented while in most countries firms prepared to pay a lower wage do not seem to be that different from the rest of the firms in terms of their openness. In most countries, firms facing a higher degree of competition in the product market are more willing to pay a higher wage when labour market conditions are tight. There appears to be no uniform pattern with respect to competition intensity when considering whether to pay a lower wage. Favourable business conditions do not seem to sharply differentiate the attitude of firms

¹⁷ Some of the more detailed results reported here are presented in Table A.4.1. in the Appendix.

towards paying a higher or lower wage, although, as expected, paying a higher wage appears to be more easily done when conditions are better. Finally, and as expected, firms that have decreased wages either in nominal or in real terms in the past are more willing to do so again.

Overall, it seems that there is an asymmetry with regard to the extent to which labour market conditions impact on the wages of new entrants. Firms are more willing to pay higher wages rather than lower wages. Furthermore, firms that are willing to deviate from the going rate differ in a number of features such as sector of economic activity, firm size and openness.

5. Why are firms reluctant to differentiate new entrants' wages? Some descriptive statistics

This section centres on firms that would *not* deviate from the going rate and looks at the reasons preventing them from doing so. As already mentioned in Section 2, firms are asked to choose between efficiency wage considerations (fairness, shirking), regulations and union pressure.

The data suggest that both the fairness version and the effort (shirking) version of the efficiency wage hypothesis are important considerations for firms when explaining why they do not consider deviating from the going wage (Table 5.1). The former is more important when explaining why a higher wage is not paid even if the labour market is tight, while the latter is more important when deciding not to pay a lower wage even if the labour market is slack. Another finding which stands out is that in quite a few countries employer-related reasons appear more important than reasons related to regulation or more general union demand. In fact, there appears, as expected, to be a negative correlation between the percentage of firms explaining their decision in terms of reasons that relate to the role of wages as an efficiency device and the EPL index. The higher the EPL index the lower the importance of employer-related reasons, the correlation being much stronger for the lower wage rather than the higher wage. Notwithstanding this weaker correlation between payment of a higher wage and EPL compared to that between a lower wage and EPL, a further interesting observation is that in quite a few countries union pressure against payment of a higher wage is higher than that against payment of a lower wage.

We also look at whether the relative importance attached to employer-related factors compared to union-related factors differs by a number of workforce and workplace characteristics. The data suggest¹⁸ that in most countries union-related reasons for not deviating from the going wage despite the labour market conditions appear lower in the trade sector than in manufacturing. Similarly, union-related reasons seem to be reported by a lower percentage of small firms than large firms consistent with the more widespread presence of union in larger firms, and with the fact that effort is easier to monitor in small firms so there is less need for efficiency-wage payments. Surprisingly, union-related reasons are as relevant for more recently established firms as they are for older firms.

Next, we move on to multivariate analysis.

6. A multivariate analysis of the determinants of new entrants' wages with workforce and firm characteristics

This section looks at the results from a multi-variate analysis starting off with the main determining factors of the wages of newly hired employees (based on question I) in an attempt to understand the reasoning behind the wage determination procedures followed. The main aim is to see whether the simple correlations described earlier still hold after conditioning on a number of variables.

The analysis is restricted to firms belonging to sectors of economic activity sampled in all countries in order to achieve more homogeneity. Thus, the sample consists of firms from the following three sectors; manufacturing; trade; and business services. Data for 14 countries are used in the analysis involving the replies to the main question of interest: the most important determining factor of the wages of new entrants. In the analysis that follows, however, the 3 countries which asked firms to score the options instead of selecting the most important one are investigated separately. The analysis on whether new entrants would be paid a higher or a lower wage, relative to the wage paid to similar workers already employed in the firm is done for 7 countries for which Questions II and III were asked.

First, we have a look at cross-country and cross-sectoral differences in the importance of *collective pay agreements* in determining the wage of new hires. The first four columns of Table 6.1 present the marginal effects from estimating,

¹⁸ Some of the results are presented in Table A.5.1 in the Appendix.

through a maximum likelihood probit, an equation where the dependent variable is binary and takes the value 1 if the collective pay agreement is considered the most important factor determining the wage of newly hired employees and zero otherwise. The estimates in these columns concern 9 countries (Austria, Belgium, the Czech Republic, Hungary, Ireland, the Netherlands, Portugal, Slovenia and Spain).¹⁹ All four specifications include country dummies to account for cross-country institutional differences. For example, as already mentioned in Section 3, in certain countries, like Hungary, in which wages are predominantly set by individual rather than collective bargaining the probability that a collective pay agreement is important is low. Furthermore, the results suggest that there are differences across sectors and across firms of different size. Companies active in trade appear less likely than those in manufacturing to be influenced by a collective agreement when hiring new employees, whereas the first column shows no significant differences for firms in the business services' sector with respect to manufacturing sector firms. Once, however, size is taken into account it appears that firms in trade are no different in this respect from manufacturing firms while business services' firms are more likely than firms in manufacturing to stick to the collective agreement. Very large firms (with over 200 employees) appear to be more likely to report the collective agreement as the most important reason in determining the wages of new entrants. By interacting size with sector we find within sector differences depending on size; small firms in trade and business services are less likely than manufacturing firms to follow the collective agreement. Very large firms in the service sector are on the other hand more likely than manufacturing sector firms to consider enforcement of the collective agreement as the most important determinant of the wages of newly hired employees. Having a collective agreement is a necessary but not sufficient condition to follow the agreement and the results of the first two columns still hold when a variable to indicate whether a firm-level collective agreement or a collective agreement at any level are in force in the firm (columns 3 and 4 of Table 6.1). But note that, in line with the fact that there is some correlation between firm size and having a collective agreement, the coefficient on small firms is no longer statistically significant. Not surprisingly, if a collective agreement is enforced in a firm, this is likely to be the most important factor in determining wages of new hires.

¹⁹ Greece and Estonia have been excluded. Greece because Question I was asked in a different way, and Estonia because of the very small number of firms (3) which declare the collective agreement as being important.

The last 3 columns of Table 6.1 report estimates from ordered probit regressions for France, Italy and Poland the countries in which firms were asked to score the importance of collective agreements in determining the wages of newly hired employees from 1 (not relevant) to 4 (very relevant). The results suggest again that small firms are less likely to consider collective agreements as relevant. The results for Italy and Poland suggest no sectoral differences and show a positive, impact of the existence of a collective agreement on the determination of new entrants' wages. The results for France are reported with caution and are slightly puzzling; there is a negative and highly significant coefficient on the collective agreement dummy.

Next, we turn to the analysis of features that distinguish firms for which external factors are important in determining the wages of entrants from the rest. The results in Table 6.2, from 10 countries, suggest that size, skill composition of the workforce, tenure of the workforce, the extent of variable pay, product market competition and the sales' performance of the firm relative to its past performance make a difference in this respect. The dependent variable is again binary and takes the value 1 for those firms for which either the wages of similar workers outside the firm or the availability of workers with similar characteristics in the labour market are perceived to be the most important factors in the determination of the wages of new hires, and takes a value of zero otherwise.

More specifically, in terms of the workforce characteristics, we note that smaller firms are more likely to be influenced by external factors, perhaps because they are less likely to have a collective agreement in the first place. Conditional on firm size and the sector in which the firm belongs, firms with a higher percentage of high-skilled white collar employees are more likely to take external factors into account in their wage decisions perhaps because such workers are more difficult to find. Conditional on the dominant skill group in the company, the extent to which the employer has developed a long-term relationship with the workforce, as indicated here by the percentage of employees with over 5 years in the company, is associated with firms giving less importance to external labour market conditions. This is consistent with the survey findings of Bewley (1999), which indicate that the wages of newly hired primary sector workers (i.e. workers with full-time and long-term contracts) are less likely to deviate from the internal pay structure due to internal equity and fairness reasons. A related factor, the size of flows in and out of the firm, did not appear here to have a significant effect on the dependent variable. Finally, we also find that the larger the

component of pay that is variable (and related to performance), the more likely are firms to be influenced by external labour market conditions in their decisions. One possible explanation is that the share of variable pay may be inversely related to the importance of both long-term relationships and the existence of any implicit contract between the employer and the employees in the firm.

Product market characteristics also seem to influence firms' wage setting decisions both through a variable measuring the extent of competition and through the firm's sales performance. The more intense the competition the more likely are firms to take external labour market conditions into account. A higher elasticity of demand and lower profits imply that firms can not afford to deviate from market conditions in the determination of their wages. Finally, there is some evidence that firms which report that their sales in the survey year were lower relative to sales in the previous year are more likely than firms with higher sales to look at labour market conditions. Finally, the introduction of a dummy to distinguish between firms which enforce a firm-level collective agreement takes on a negative sign, as expected, but is not statistically significant. We also run some ordered probits with the last specification in Table 6.2 for Italy, France and Poland (the results are reported in Table A.6.1. in the Appendix). The sign on the competition variable appears to be confirmed and so does, with the exception of Poland, the result regarding the skill level of the workforce. The tenure variable is only available for Poland and again suggests that a high percentage of employees with tenure for over 5 years make external labour market conditions less important.

Overall, the findings suggest a picture similar to the one presented by Bewley (1999) regarding the primary labour market: large firms with a high percentage of employees with which they have established long-term relationships are less likely to differentiate the wages of new hires. At the same time, competitive goods market conditions limit the extent to which external labour market conditions can be ignored.

Finally, we turn to the analysis of the two survey questions that enquire about the influence of external labour market conditions on the determination of wages of new hires. The first question asks whether employers would pay a lower wage to new hires when there is excess supply in the labour market; the other question relates to the opposite situation. Table 6.3 presents the results of the probit analysis using firms' replies to these two questions. The "Lower wage" columns report the marginal effects from modeling a binary variable which takes the value 1 if managers state they would consider paying newly hired employees a wage lower than that of similar, in terms of experience and qualifications, workers in the firm if there was abundance of the relevant skill group in the labour market, and takes the value 0 otherwise. The "Higher wage" columns, on the other hand, report marginal effects from modeling a binary variable which takes the value 1 if managers reply they would consider paying new entrants a wage higher than that paid to similar incumbents if there was a shortage of this skill group in the labour market, and takes the value 0 otherwise.

The results suggest that in general the characteristics that could lead to a lower wage differ from those that could lead to a higher wage. We find no evidence, after conditioning on firm-size and a number of other characteristics, of differentiation between firms in different sectors as to the likelihood of paying a lower wage. On the other hand, firms active in the trade sector are, as expected, less likely, than firms in the manufacturing sector or business services, to pay a higher wage. Firms with 20-49 employees appear more likely than larger firms to pay a lower wage, while very small firms (with less than 20 employees) seem less likely than medium-sized firms to pay a higher wage and firms with over 200 employees are more likely to pay a higher wage. The decision to pay lower wages seems to be correlated with the incidence of a cut in wages in the last 5 years. On the other hand, a higher wage is likely to be paid the larger a firm, the more skilled employees it has, the higher the share of variable components in the wage bill and the more competition the firm faces in the product market. One result that appears to come in quite strongly is that in firms in which a high percentage of employees have long-tenure, internal wage policies appear to be more important than external labour market conditions.

The results of this section confirm the statistics presented in the previous sections, and in general support the view that workplace, workforce and product market characteristics are all important in shaping the wages of new entrants. The view that firms have internal wage policies appears to be consistent with the

results reached. Furthermore, there appears to be a link between the operation of the product market and the labour market; the more competitive the product market the more important do labour market conditions become in the determination of wages.

7. Conclusions

[To be done]

Table 3.1: Percentage of firms reporting each factor as the most important in determining entry wages of newly hired employees and institutional setting indicators

Replies to Question I							Institutional setting indicators			
Collective pay agreement	Wage of similar employees in the firm	Wage of similar employees outside the firm	Availability of similar workers in the labour market	Other reasons	Internal factors	External factors	Level of coverage by collective pay agreement*	Most widely used levels of collective bargaining*	Overall EPL index	
(1)	(2)	(3)	(4)	(5)	(6)=(1)+(2)	(7)=(3)+(4)	(8)	(9)	(10)	
Panel A: Countries selecting a single option in Question I										
EE	2	65	11	21	1	67	32	Low	Company	
HU	4	80	7	5	4	84	12	Low	Company	1.7
IE	14	53	17	9	6	68	27		National	1.3
CZ	16	69	4	9	2	85	13	Low/ Medium	Company	1.9
PT	25	51	6	17	0	77	23	High	Sectoral	3.5
SI	29	57	6	6	1	87	13	High	National/Sectoral	
BE	34	52	4	5	5	85	9	High	Sectoral	2.5
NL	34	49	10	5	1	83	16	High	Sectoral	2.3
AT	39	51	2	5	2	90	7	High	Occupational/Sectoral	2.2
GR	43	30	18	8	1	73	26	High	Occupational/Sectoral	2.9
ES	73	19	1	3	3	93	4	High	Regional/Sectoral	3.1
Unweighted average	32	51	7	7	3	83	14			
Weighted average	45	40	6	6	3	86	12			
Panel B: Countries scoring options in Question I*										
						Average	Average			
PL	1.4	3.2	2.3	2.8	1.7	2.3	2.6	Low	Company	2.1
FR	2.4	3.3	2.3	2.7	1.7	2.9	2.5	High	Sectoral/Company	2.9
IT	3.3	2.8	2.0	2.5	N/A	3.1	2.2	High	Sectoral	2.4
Unweighted average	2.4	3.2	2.2	2.7	1.7	2.8	2.5			
Weighted average	2.7	3.1	2.2	2.6	1.7	2.9	2.4			

Notes: See Section 2 on the exact formulation of Question I and the Appendix for more details on certain cross-country differences in the questionnaire. Weighted averages calculated on the basis of GDP shares. AT=Austria, BE=Belgium, CZ=Czech Republic, EE=Estonia, ES=Spain, FR=France, GR=Greece, HU=Hungary, IE=Ireland, IT=Italy, NL=Netherlands, PL=Poland, PT=Portugal, SI=Slovenia.

* Scores vary from 1 (not relevant) to 4 (relevant). See Appendix for further details.

* Du Caju *et al.* (2008), **OECD (2004), Table 2.A2.4, p.117.

Table 3.2: Percentage of firms reporting that external factors are important in determining entry wages: differences by sector, firm size and firm age

	Sector of economic activity			Size of firms		Age of firms	
	Manufacturing	Trade	Business services	Small firms	Medium and large firms	Older firms	New firms
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Countries selecting a single option in Question I							
Unweighted average	12	15 ^{***}	16 ^{***}	16	13 ^{***}	19	23 ^{**}
Weighted average	9	13 ^{***}	14 ^{***}	14	10 ^{***}	21	28 ^{***}
Panel B: Countries scoring options in Question I⁺							
Unweighted average	2.5	2.5	2.4	2.5	2.4 ^{**}	2.5	2.6
Weighted average	2.4	2.4	2.4	2.4	2.3 ^{***}	2.5	2.6

Notes: Panel A: Percentage of firms reporting that external factors (options c or d of Question I) are important in the determination of wages of new entrants in each sector, size and age group. Panel B: Average of the scores given to options c and d of Question I by firms in France, Italy and Poland. Significant differences from the reference group (the first column in each dimension) are indicated with *** for significance at the 1%, ** for significance at the 5%, and * for significance at the 10%. Weighted averages calculated on the basis of GDP shares. Small firms are defined as those with fewer than 50 employees. Older firms are defined as those established in 2000 or before. For Panel B countries the age of the firm is only available for firms in Poland.

⁺ Scores vary from 1 (not relevant) to 4 (relevant). See Appendix for further details.

Table 3.3: Conduct and performance characteristics of firms taking external factors into account

	Export share	Price adjustments due to competition	Degree of competition intensity	Business conditions	Wages have been kept stable
	(1)	(2)	(3)	(4)	(5)
Panel A: Countries selecting a single option in Question I					
Unweighted averages	25.7*** (21.7)	61*** (55)	88 (86)	3.50***(3.42)	14*** (9)
Weighted average	22.9*** (19.9)	61*** (52)	85* (83)	3.58***(3.43)	17*** (9)
Panel B: Countries ranking options in Question I⁺					
Unweighted average	20.1** (18)	61***(51)	93*** (90)	3.7*** (3.6)	5** (3)
Weighted average	21.8*** (18.9)	59***(50)	93 (91)	3.6*** (3.5)	5*** (2)

Notes: Panel A: Average value of each variable for firms reporting that external factors (options c or d of Question I) are important in the determination of the wages of new entrants. The average value of each variable for firms not reporting external factors as being important is reported in parentheses. Panel B: Average value of each variable for firms for which the average score on options c and d of Question I exceeds 2 compared in brackets with the average value of the variables for firms for which the average score on options c and d of Question I is less than 2. Significant differences from the firms not reporting external factors are indicated with *** for significance at the 1%, ** for significance at the 5%, * for significance at the 10%. Weighted averages calculated on the basis of GDP shares.

Export share: % of revenue derived from exports. *The Price adjustments due to competition:* percentage of firms that are likely or very likely to follow their competitors when they decrease prices. *Degree of competition intensity:* percentage of firms for which competition is severe or strong, and 0 otherwise. The *Business conditions* variable compares sales in the year of the survey relative to the previous year and takes values from 1 to 5: 1=sales were much lower, 2=sales were lower, 3=sales were about the same, 4=sales were higher and 5=sales were much higher. The *Wages have been kept stable* column reports the percentage of firms which indicate that they have kept wages stable at some point during the last five years.

⁺ Scores vary from 1 (not relevant) to 4 (relevant). See Appendix for further details.

Table 3.4: Workplace and workforce related characteristics of firms taking external factors into account

	Firm-level agreement	Collective agreement at any level	Labour costs	Variable pay	Skilled workers dominant group	Tenure more than 5 years	Gross flows
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Countries selecting a single option in Question I							
Unweighted average	28*** (24)	59*** (71)	35.3** (34.0)	19.5*** (13.2)	45*** (34)	42.6*** (48.2)	38.7 (41.4)
Weighted average	24 (23)	68*** (87)	37.4*** (34.4)	14.4*** (8.4)	40*** (33)	44.3*** (49.8)	40.8** (46.4)
Panel B: Countries ranking the options in Question I*							
Unweighted average	47** (43)	81*** (87)	32.4 (32.0)	12*** (9.2)	36 (34)	51.1 (54.7)	31.2 (29.4)
Weighted average	51*** (44)	83** (96)	32.2 (32.0)	9.9*** (9.4)	37*** (33)	51.1 (54.7)	28.1 (28.6)

Notes: Panel A: Average value of each variable for firms reporting that external factors (options c or d of Question I) are important in the determination of the wages of new entrants. The average value of each variable for firms not reporting external factors as being important is reported in parentheses. Panel B: Average value of each variable for firms for which the average score on options c and d of Question I exceeds 2 compared in brackets with the average value of the variables for firms for which the average score on options c and d of Question I is less than 2. Significant differences from the firms not reporting external factors are indicated with *** for significance at the 1%, ** for significance at the 5%, * for significance at the 10%. Weighted averages calculated on the basis of GDP shares.

The *Firm-level agreement* and *Collective agreement at any level* express the percentage of firms with a collective agreement.

The *Labour costs* variable measures the percentage of labour costs in total costs. The *Variable pay* indicates what percentage of the wage bill is linked to firm-level or individual performance. The *Dominant group of workers by skill* variable: percentage of firms in which the largest group of workers in the firm is either highly skilled blue-collar or highly skilled white-collar.

The *Tenure more than 5 years* variable measures the proportion of employees in % with more than 5 years tenure in the company.

The *Gross flows* variable is defined as the sum of the inflow and outflow of workers from a firm over total employment in the firm.

* Scores vary from 1 (not relevant) to 4 (relevant). See Appendix for further details.

Table 4.1: Percentage of firms in each country prepared to pay a lower or higher wage to new entrants

	<i>Lower wage</i>	<i>Higher wage</i>
EE	17.2	17.5
PL	16.0	4.0
IT	12.1	22.6
HU	11.8	16.5
GR	10.1	15.4
CZ	9.9	15.2
SI	5.4	5.6
Unweighted average	11.8	14.5
Weighted average	12.2	18.7

Notes: Countries are ranked in descending order of the percentage of affirmative replies to Question II. Weighted average calculated on the basis of GDP shares.

Table 4.2: Actions of firms in different labour market conditions according to whether they declare they take labour market conditions into account or not

	Could pay a lower entry wage if there is labour abundance	Could pay a higher entry wage if there is a labour shortage
Panel A: Countries selecting a single option in Question I		
CZ	20 ^{**} (9)	39 ^{***} (12)
EE	23 [*] (15)	33 ^{***} (10)
GR	14 [*] (8)	17 (14)
HU	23 ^{***} (10)	34 ^{***} (14)
SI	7 (5)	16 ^{***} (4)
Unweighted average	19 ^{***} (9)	28 ^{***} (12)
Weighted average	16 ^{***} (9)	23 ^{***} (13)

Notes: Percentage of firms replying they would deviate from the going wage amongst the firms having selected options c or d in Question I. In brackets the percentage of firms prepared to pay a lower or higher wage although they had not selected options c or d of Question I. Statistical significance of the differences between the two groups is noted by ^{***}, ^{**}, and ^{*} for significance at the 1%, 5% and 10% respectively. Weighted averages calculated on the basis of GDP shares.

Table 5.1: Reasons put forward by firms for not paying a lower or a higher wage (firms selecting each reason as a % of firms replying they would not pay a different wage)

	Unfair		Negative effect on effort		Labour regulation/collective agreement		Unions would contest such action	Would lead to pressures for wage increases	Employer-related factors		Union-related factors	
	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)=(1)+(3)	(10)=(2)+(4)	(11)=(5)+(7)	(12)=(6)+(8)
HU	48.5	40.1	32.6	42.7	7.2	4.6	0.5	6.5	81.1	82.8	7.6	11.1
PL	40.2	52.9	50.4	33.5	6.4	3.6	0.0	7.3	90.6	86.4	6.4	10.9
CZ	37.2	38.8	44.2	37.5	27.4	20.2	0.9	15.0	66.8	61.9	27.7	35.2
IT	28.6	29.0	24.9	35.6	41.5	15.9	3.3	18.0	53.5	64.7	44.8	33.8
GR	26.2	66.4	40.0	18.2	43.7	6.7	1.7	23.0	54.4	72.4	43.1	28.5
EE	25.4	24.3	68.1	54.1	3.5	2.7	0.4	16.2	93.5	78.4	3.9	18.9
SI	22.1	32.0	49.6	41.1	23.6	13.9	0.4	7.6	71.7	73.1	24.0	21.5
Unweighted average	36.5	40.3	39.2	38.2	19.7	8.6	1.1	11.2	73.7	76.6	20.5	19.7
Weighted average	30.9	37.2	31.3	34.2	35.0	12.8	2.5	16.1	60.2	69.7	37.2	28.8

Notes: 1. Countries are ranked in decreasing order of the percentages in Column 1. 2. The sum of (9) and (11) might be less than 100 because firms in some countries were given also a more general option "For other reasons", the sum of (9) and (11) might exceed 100 because in some countries firms have selected more than one reason for which they would not deviate from the going wage. 3. The weighted average uses GDP shares for the average.

Table 6.1: Probability of following the collective agreement in determining the wages of new entrants' (Robust standard errors in brackets)

	Probit estimates (Marginal effects) (Sample A countries)				Ordered probit estimates (Sample B countries)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Sample A countries			France	Italy	Poland
Trade	-0.025* [0.013]	-0.008 [0.014]	0.007 [0.017]	-0.006 [0.017]	0.647*** [0.146]	-0.008 [0.099]	-0.100 [0.149]
Business services	0.020 [0.012]	0.031** [0.013]	0.046*** [0.015]	0.062*** [0.016]	0.213*** [0.064]	-0.045 [0.094]	0.019 [0.156]
5-19 employees		-0.019 [0.015]	0.001 [0.017]	0.001 [0.018]	-0.165* [0.091]	0.173 [0.252]	-0.412*** [0.158]
20-49 employees		-0.027* [0.015]	-0.005 [0.019]	-0.008 [0.019]	-0.123* [0.074]	-0.045 [0.090]	-0.478** [0.189]
200 employees and over		0.087*** [0.016]	0.082*** [0.019]	0.093*** [0.019]	0.093 [0.063]	0.248** [0.100]	0.168 [0.179]
Firm-level collective agreement			0.129*** [0.018]		-0.501*** [0.055]	0.173** [0.081]	1.230*** [0.143]
Collective agreement at any level				0.376*** [0.014]			
Observations	8769	8632	6978	6783	1814	897	642
Log-likelihood	-4340.20	-4291.31	-3959.17	-3766.24	-2437.33	-970.54	-364.50
Observed probability	0.323	0.328	0.394	0.403			
Predicted probability	0.279	0.284	0.381	0.375			

Robust standard errors in brackets
*** p<0.01, ** p<0.05, * p<0.1

Notes: 1. The figures in columns 1-4 are the marginal effects from estimating a probit equation where the dependent variable takes the value 1 if the collective agreement is reported as the most important factor in determining the wages of newly hired employees, and zero otherwise. 2. All specifications in columns 1-4 include country dummies. 3. The 9 Sample A countries are: Austria, Belgium, the Czech Republic, Hungary, Ireland, the Netherlands, Portugal, Slovenia and Spain. 3. A test for equal coefficients on the size dummies is always rejected and the same is true of a test of equal coefficients on sectoral dummies. 5. The figures in columns 5-7 are estimates from ordered probit regressions for each country. The dependent variable is the score attributed by the firm to the importance of a collective agreement in determining the wages of newly hired employees and this ranges from 1 (not relevant) to 4 (very relevant). 6. Unweighted estimates.

Table 6.2: Probability of taking external factors into account in determining new entrants' wages (Marginal effects)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sectoral dummies (Reference group: Manufacturing)							
Trade	0.023** [0.010]	0.006 [0.009]	-0.005 [0.014]	-0.020 [0.015]	-0.026* [0.015]	-0.025* [0.015]	-0.020 [0.021]
Business services	0.029*** [0.009]	0.010 [0.009]	-0.008 [0.013]	-0.011 [0.014]	-0.008 [0.015]	-0.010 [0.015]	-0.023 [0.019]
Size dummies (Reference group: firms with 50-199 employees)							
5-19 employees	0.031*** [0.010]	0.021** [0.010]	0.029* [0.016]	0.047** [0.019]	0.049** [0.019]	0.056*** [0.020]	0.075*** [0.025]
20-49 employees	0.015 [0.010]	0.013 [0.010]	0.018 [0.015]	0.034** [0.017]	0.035** [0.017]	0.038** [0.018]	0.055** [0.025]
200+ employees	0.001 [0.011]	0.001 [0.011]	0.006 [0.016]	0.016 [0.018]	0.008 [0.018]	0.005 [0.018]	0.005 [0.023]
Dominant skill group dummies (Reference group: Low skilled blue collar)							
High-skilled blue collar		0.042*** [0.011]	0.038** [0.016]	0.058*** [0.018]	0.060*** [0.018]	0.061*** [0.018]	0.069*** [0.023]
Low-skilled white collar		0.082*** [0.016]	0.066*** [0.023]	0.080*** [0.026]	0.079*** [0.026]	0.079*** [0.027]	0.102*** [0.036]
High-skilled white collar		0.108*** [0.015]	0.088*** [0.019]	0.093*** [0.022]	0.091*** [0.022]	0.086*** [0.022]	0.117*** [0.028]
Other		0.034 [0.026]	-0.022 [0.045]	-0.014 [0.047]	-0.013 [0.047]	-0.027 [0.046]	-0.089 [0.054]
Other workforce related characteristics							
% employees with tenure >5 years			-0.092*** [0.018]	-0.101*** [0.020]	-0.100*** [0.020]	-0.105*** [0.021]	-0.131*** [0.028]
% of wage bill related to variable pay				0.102** [0.042]	0.097** [0.042]	0.091** [0.042]	0.121** [0.052]
Business environment in which the firm operates							
Competition dummy (1=more competition)					0.035*** [0.012]	0.035*** [0.012]	0.040*** [0.016]
Sales' performance dummies (Reference group: Sales higher than in the previous year)							
Much lower sales						-0.041 [0.030]	-0.053 [0.037]
Lower sales						0.033* [0.020]	0.025 [0.025]
Sales flat						-0.000 [0.014]	-0.025 [0.019]
Sales much higher						0.031 [0.022]	0.007 [0.025]
Collective agreement in force in the firm							
Firm-level collective agreement							-0.021 [0.018]
Observations	9310	9172	5287	4222	4183	4101	2739
Log-likelihood	-3544.80	-3433.14	-2367.52	-1857.39	-1831.39	-1788.34	-1304.95
Observed probability	0.142	0.141	0.181	0.179	0.179	0.179	0.210
Predicted probability	0.125	0.121	0.168	0.164	0.163	0.162	0.191
Robust standard errors in brackets							
*** p<0.01, ** p<0.05, * p<0.1							

Notes: 1. The figures presented are the marginal effects from estimating a probit equation where the dependent variable takes the value 1 if external factors are important in determining wages of newly hired employees, and zero otherwise. 2. The sample composition is determined by the availability of variables across countries. The first two columns include 10 countries. Columns 3 – 6 exclude Belgium, Spain, and the Netherlands for which the tenure information is not available. The last column also excludes Hungary for which the firm-level collective agreement information is not available. 3. The *Competition* variable is here binary and takes the value 1 when a firm replies that it is very likely or likely to reduce prices in the event that its main competitor does so, and zero otherwise. 4. Unweighted estimates.

Table 6.3: Features of firms paying a lower or higher wage to employees

	(1)	(2)	(3)	(4)
	Lower wage	Higher wage	Lower wage	Higher wage
Sectoral dummies (Reference group: manufacturing)				
Trade	0.002 [0.013]	-0.024* [0.013]	0.003 [0.014]	-0.026* [0.014]
Business services	0.005 [0.013]	0.003 [0.012]	0.007 [0.014]	0.004 [0.014]
Size dummies (Reference group: firms with 50-199 employees)				
5-19 employees	0.020 [0.016]	-0.039*** [0.014]	0.024 [0.018]	-0.021 [0.016]
20-49 employees	0.032** [0.015]	0.006 [0.013]	0.045*** [0.016]	0.007 [0.014]
200 employees or over	-0.007 [0.016]	0.038** [0.017]	0.005 [0.017]	0.034* [0.017]
Dominant skill group dummies (Reference group: Low-skilled blue collar)				
High skilled blue collar	0.013 [0.015]	0.013 [0.016]	0.017 [0.016]	0.011 [0.017]
Low skilled blue collar	0.018 [0.019]	0.023 [0.020]	0.013 [0.020]	0.017 [0.022]
High skilled white collar	-0.017 [0.015]	0.091*** [0.021]	-0.011 [0.017]	0.069*** [0.023]
Other	0.000 [0.038]	-0.006 [0.034]	-0.014 [0.036]	-0.016 [0.032]
Other workforce related characteristics				
% employees with tenure longer than 5 years	-0.033** [0.017]	-0.039** [0.017]	-0.046*** [0.018]	-0.050*** [0.018]
Real wages cut in the last 5 years (1=yes, 0=no)			0.064*** [0.022]	0.033* [0.020]
Size of wage bill linked to variable pay (Reference group: No part of the wage bill linked to variable pay)				
Variable pay <5% of wage bill			0.008 [0.019]	0.019 [0.020]
Variable pay between 5%-10%			0.008 [0.017]	0.025 [0.019]
Variable pay >10%			0.000 [0.015]	0.027* [0.016]
Business environment in which the firm operates				
Competition dummy (1=more competition)			0.013 [0.011]	0.020* [0.011]
Observations	3804	3802	3271	3276
Log-likelihood	-1327.65	-1341.81	-1111.27	-1140.81
Predicted probability	0.115	0.124	0.112	0.123
Observed probability	0.110	0.108	0.105	0.105

Robust standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Notes: 1. Figures presented are the marginal effects (from estimating a probit equation where the dependent variable takes the value 1 if the firm would pay a lower wage (columns 1,3) to new entrants compared to that paid to similar incumbents in the firm or a higher wage (columns 2,4) to new entrants compared to that paid to similar incumbents in the firm. 2. The sample composition is determined by the availability of variables across countries. The two relevant questions have been asked in the following 7 countries: Czech Republic, Estonia, Greece, Hungary, Italy, Poland, and Slovenia. 3. The "Wages cut in the last 5 years" dummy takes the value 1 if the firm replies that in the last 5 years wages have been cut for some or all employees. 4. The dummies for the extent to which part of the wage bill is linked to individual or company performance has been constructed on the basis of the continuous variable used in Table 6.2. 5. For the rest of the variables see notes to Table 6.2. 6. Unweighted estimates.

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Appendix

This Appendix is divided into the following 7 sections: Section A1 presents some more detailed information on the questionnaire used in the survey with reference to Questions I-III of interest to this paper. Section A2 presents descriptives on survey variables used in this paper. Sections A3-A6 present detailed tables corresponding to Sections 3-6 of the paper. Some more detailed information on the variables on institutional settings and labour market performance in the survey countries is presented in Section A7.

A1. Differences between countries in the questions of interest and the harmonisation process followed

The main differences across countries in the formulation of the 3 main questions of interest (see Section 2 of the main text) for this paper are the following:

Austria

For Question I Austria distinguishes the second option “Wage of similar employees in the firm” into two options: “Entry wage of similar employees” and “Current wage of similar employees”. Around 22% of Austrian firms that replied to this question selected the first of these options, and around 25% of firms selected the second of these options. For harmonisation purposes replies to the more refined options have been added together and treated similarly to the replies given to the second option by firms in other countries.

France, Italy, and Poland

Firms in these 3 countries were not asked to select one of the 5 options provided in the first question but to *rank*, on a 5 point scale (4 point scale for Poland), each option according to its importance for the firm. The ranking of the options in terms of relevance extends from 1 to 4 increasing in relevance. France and Italy also allowed firms the option of replying they “Don’t know”. Firms which have selected this option are excluded from the analysis for that option.

Greece

In Greece, in order to avoid receiving too many replies about the collective agreement being the most important factor determining the wages of newly hired employees (since minimum wages are set by collective bargaining) Question I has been asked slightly differently: “*Besides the collective pay agreement enforced in*

your company which of the following factors is the most relevant in determining the entry wage of newly hired employees? Options b...e of the standardised questionnaire follow. For harmonisation purposes option a of the standardised questionnaire has been reconstructed by using the replies to the Questions II and III which provide the option that the collective agreement could be preventing a lower or a higher wage from being paid.

Greece and Portugal

Greece and Portugal asked the first question separately for skilled and unskilled employees. This information has not been explored yet. In the case of Greece the information used refers to the largest skill group in each company, while in the case of Portugal the replies for skilled employees are used.

A2. Sample composition of the dataset and descriptive statistics on the variables used in the paper

Table A2.1: Number of firms in the sample by country and sector of economic activity

Country	Sample size	Manufacturing	Energy	Construction	Trade	Business services	Financial intermediation	Unclassified
AT	557.00	181.00	6.00	86.00	109.00	142.00	33.00	-
BE	1,431.00	650.00	11.00	210.00	297.00	237.00	26.00	-
CZ	399.00	231.00	-	33.00	52.00	83.00	-	-
EE	366.00	146.00	-	52.00	69.00	99.00	-	-
FR	2,029.00	1,281.00	-	-	63.00	671.00	-	14.00
GR	429.00	168.00	-	-	114.00	147.00	-	-
HU	2,006.00	763.00	47.00	159.00	439.00	539.00	50.00	9.00
IE	985.00	161.00	6.00	66.00	241.00	441.00	66.00	4.00
IT	953.00	527.00	-	-	187.00	229.00	10.00	-
NL	1,068.00	244.00	-	123.00	247.00	378.00	76.00	-
PL	1,161.00	249.00	12.00	129.00	437.00	269.00	65.00	-
PT	1,436.00	542.00	11.00	204.00	260.00	411.00	8.00	-
SI	658.00	238.00	16.00	68.00	146.00	164.00	26.00	-
ES	1,835.00	722.00	65.00	-	448.00	600.00	-	-
Total	15,313.00	5,381.00	109.00	1,130.00	2,661.00	3,810.00	360.00	27.00

Notes: AT=Austria, BE=Belgium, CZ=Czech Republic, EE=Estonia, ES=Spain, FR=France, GR=Greece, HU=Hungary, IE=Ireland, IT=Italy, NL=Netherlands, PL=Poland, PT=Portugal, SI=Slovenia

Sector correspondence with NACE Rev. 1.1. codes: Manufacturing NACE codes 15-37, Energy NACE codes 40-41, Construction NACE code 45, Trade NACE codes: 50-52, Business services NACE codes 55,60-64,70-74,90-93, Financial intermediation: NACE codes 65-67.

Table A2.2: Size distribution of firms by country

Country	5-19 employees	20-49 employees	50-199 employees	200 employees and over
AT	21.1%	19.1%	29.9%	29.9%
BE	36.6%	28.1%	25.7%	9.6%
CZ	0.0%	15.3%	29.8%	54.9%
EE	24.8%	26.7%	42.3%	6.2%
FR	12.8%	19.1%	38.4%	29.8%
GR	29.9%	32.4%	24.5%	13.2%
HU	11.3%	30.0%	40.9%	17.8%
IE	49.1%	22.7%	17.3%	10.9%
IT	2.8%	34.4%	36.8%	26.0%
NL	45.8%	19.7%	23.8%	10.7%
PL	43.1%	21.0%	24.1%	11.8%
PT	15.9%	17.4%	45.5%	21.2%
SI	42.5%	18.6%	14.1%	24.8%
ES	29.5%	18.8%	23.2%	28.5%
Total	24.8%	22.9%	30.8%	21.4%

Table A2.3: Sectoral distribution of firms by country

Country	Manufacturing	Trade	Business services
AT	42.1%	25.1%	32.8%
BE	56.4%	24.7%	18.9%
CZ	63.5%	14.5%	22.0%
EE	46.6%	21.8%	31.6%
FR	64.4%	3.2%	32.4%
GR	43.4%	24.7%	31.9%
HU	45.2%	24.7%	30.1%
IE	19.2%	29.7%	51.1%
IT	56.1%	19.9%	24.0%
NL	28.0%	29.0%	43.1%
PL	30.9%	41.5%	27.6%
PT	47.0%	20.9%	32.1%
SI	43.4%	26.6%	29.9%
ES	41.4%	25.5%	33.1%
Total	46.0%	22.3%	31.7%

Table A2.4: Percentage of firms with a firm-level collective agreement

Country	% of firms with a firm-level collective agreement
AT	22.3%
BE	28.3%
CZ	51.5%
EE	7.8%
FR	57.9%
GR	24.7%
HU	N/A
IE	21.2%
IT	41.1%
NL	13.6%
PL	16.3%
PT	89.8%
SI	18.1%
ES	N/A
Total	38.5%

Table A2.5: % of firms for which each skill category is dominant

Country	Low skilled blue collar	High skilled blue collar	Low skilled white collar	High skilled white collar	Other
AT	28.0%	29.5%	4.9%	34.1%	3.4%
BE	52.5%	9.9%	20.7%	16.8%	0.0%
CZ	77.3%	4.2%	2.2%	5.0%	11.2%
EE	32.2%	53.1%	6.5%	8.1%	0.0%
FR	67.5%	17.0%	5.5%	10.1%	0.0%
GR	14.4%	18.6%	31.0%	36.1%	0.0%
HU	65.5%	11.5%	9.1%	11.5%	2.5%
IE	48.4%	21.5%	10.4%	19.8%	0.0%
IT	45.0%	27.7%	23.6%	3.7%	0.0%
NL	58.4%	11.2%	8.2%	7.8%	14.4%
PL	39.5%	23.5%	15.6%	21.4%	0.0%
PT	24.5%	51.6%	5.7%	18.2%	0.0%
SI	66.8%	13.7%	7.5%	12.0%	0.0%
ES	50.0%	37.3%	8.9%	3.0%	0.8%
Total	51.4%	23.4%	10.9%	12.6%	1.8%

A2.6: Firm characteristics relating to the importance and variability of labour costs and workforce tenure

Country	Average % of wage bill linked to performance	Average % of employees with tenure over 5 years	% of firms for which the wage has been frozen in the last 5 years	% of firms for which the wage has been cut in the last 5 years
AT	7.9	54.1	11.0	4.1
BE	7.9	N/A	6.4	2.3
CZ	19.6	49.2	26.7	7.0
EE	13.6	46.3	22.1	5.5
FR	11.4	N/A	2.2	8.4
GR	8.0	48.4	2.6	0.0
HU	9.5	44.3	11.5	2.2
IE	11.2	43.8	6.3	1.9
IT	5.8	N/A	8.4	0.7
NL	7.4	N/A	3.8	1.1
PL	15.7	52.7	22.9	4.0
PT	49.7	N/A	9.4	1.5
SI	19.2	53.7	15.8	3.8
ES	3.5	N/A	2.9	0.1
Total	13.0	48.1	8.4	3.0

Table A2.7: Descriptives relating to the environment in which the firm operates, its age and its sales performance in the survey year

Country	Competition	Firm age	Sales performance				
	Average % of firms facing competition	% of firms established in the last 10 years	Revenue much lower than in the previous year	Revenue lower than in the previous year	Revenue about the same as in the previous year	Revenue higher than in the previous year	Revenue much higher than in the previous year
AT	54.5%	N/A	2.4%	6.1%	20.6%	43.7%	27.2%
BE	32.5%	N/A	2.0%	16.9%	25.5%	48.8%	6.8%
CZ	72.0%	24.8%	2.2%	10.9%	25.2%	51.3%	10.4%
EE	56.7%	39.1%	9.4%	11.4%	23.5%	42.0%	13.7%
FR	56.2%	N/A	6.5%	15.9%	10.2%	42.1%	25.3%
GR	71.0%	31.8%	5.9%	7.8%	36.9%	41.6%	7.8%
HU	54.6%	39.7%	2.0%	12.6%	38.7%	41.5%	5.3%
IE	52.4%	28.8%	3.1%	10.3%	25.7%	51.2%	9.7%
IT	51.6%	N/A	3.8%	10.5%	27.1%	44.8%	13.8%
NL	N/A	N/A	1.5%	8.2%	28.8%	50.6%	10.9%
PL	66.0%	42.1%	5.4%	10.9%	16.7%	43.3%	23.7%
PT	56.4%	N/A	0.0%	27.9%	16.6%	55.5%	0.0%
SI	73.2%	N/A	3.6%	13.7%	19.5%	35.6%	27.6%
ES	46.6%	N/A	4.3%	15.2%	32.8%	44.0%	3.7%
Total	55.5%	35.9%	4.2%	14.1%	24.0%	45.0%	12.7%

Note: Competition is here a binary variable which takes the value 1 when a firm replies that it is very likely or likely to reduce prices in the event that its main competitor does so, and zero otherwise.

A3. Detailed tables corresponding to Tables in Sections 3-6 of the main text

A.3.1. Detailed tables corresponding to Section 3

Table A.3.1: Percentage of firms reporting that external factors are important in determining entry wages: differences by sector, firm size and firm age (Panel A countries)

Sector of economic activity			Size of firms		Age of firms	
Manufacturing	Trade	Business services	Small firms	Medium and large firms	Older firms	New firms
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Countries selecting a single option in Question I						
AT	4	11	8	7		
BE	6	12**	13***	9	9	
CZ	13	12	11	21	11*	13
EE	31	32	34	36	28	31
ES	3	6	4	5	4	
GR	21	30	30	25	28	24
HU	12	10	13	12	12	11
IE	17	25	31***	29	21**	26
NL	11	15	19**	18	11***	
PT	25	25	20	24	23	24
SI	10	17	13	15	9**	20

Notes: Percentage of firms reporting that external factors (options c or d of Question I) are important in the determination of wages of new entrants by sector, size and age group. Significant differences from the reference group (the first column in each dimension) are indicated with *** for significance at the 1%, ** for significance at the 5%, * for significance at the 10%.

Small firms are defined as those with fewer than 50 employees. Older firms are defined as those established in 2000 or before.

Table A.3.2: Average importance assigned to each of the determinants of the wages of newly hired employees: differences by sector, firm size and firm age (Panel B countries)

	Sector of economic activity			Firm size		Firm age	
	Manufacturing	Trade	Business services	Small firms	Medium and large firms	Old firms	Young firms
Collective pay agreement							
FR	2.3	3.1	2.5	2.4	2.4	N/A	N/A
IT	3.3	3.3	3.3	3.2	3.3	N/A	N/A
PL	1.5	1.3	1.4	1.1	1.7	1.4	1.3
Wage of similar employees in the firm							
FR	3.4	3.2	3.2	3.3	3.4	N/A	N/A
IT	2.8	2.8	2.8	2.8	2.8	N/A	N/A
PL	3.1	3.2	3.2	3.1	3.3	3.2	3.1
Wage of similar employees outside the firm							
FR	2.3	2.2	2.2	2.2	2.3	N/A	N/A
IT	2.0	2.1	2.0	1.9	2.0	N/A	N/A
PL	2.2	2.3	2.2	2.3	2.2	2.3	2.2
Availability of similar employees in the labour market							
FR	2.7	2.9	2.6	2.6	2.7	N/A	N/A
IT	2.5	2.4	2.3	2.4	2.5	N/A	N/A
PL	2.8	2.8	2.8	2.8	2.8	2.8	2.8

Notes: Value arising from averaging across firms of the ranking provided by firms in each of the three countries. The ranking varies from 1 (not relevant) to 4 (very relevant).

Small firms are defined as those with fewer than 50 employees. Old firms are defined as those established in 2000 or before.

Table A.3.3: Conduct and performance characteristics of firms taking external factors into account (Panel A countries)

	Export share	Price adjustments due to competition	Degree of competition intensity	Business conditions	Wages have been kept stable
	(1)	(2)	(3)	(4)	(5)
Panel A: Countries selecting a single option in Question I					
AT	33.5 (32.2)	71 (57)	N/A	4.19** (3.84)	16 (11)
BE	49.7 (39.9)	36 (34)	N/A	3.57** (3.37)	9* (6)
CZ	39.4 (38.5)	74 (72)	91 (93)	3.54 (3.58)	37 (25)
EE	34.0 (31.7)	62 (58)	88 (90)	3.33 (3.42)	26 (20)
ES	16.8 (14.6)	45 (47)	N/A	3.49** (3.26)	7*** (2)
GR	17.3 (19.5)	73 (70)	98* (92)	3.64*** (3.30)	13 (11)
HU	26.0** (20.9)	60* (54)	87 (88)	3.40 (3.37)	6 (6)
IE	15.5 (13.8)	56 (57)	86 (87)	3.56 (3.53)	9 (8)
NL	22.4* (17.7)	N/A	73 (74)	3.63 (3.61)	29* (22)
PT	30.6*** (21.7)	63** (55)	92** (87)	3.27 (3.30)	19** (16)
SI	30.3 (31.5)	69 (74)	92 (89)	3.87 (3.67)	3 (3)

Notes: Mean value of each variable for firms reporting that external factors (options c or d of Question I) are important in the determination of the wages of new entrants. The average value of each variable for firms not reporting external factors as being important is reported in parentheses. Significant differences from the firms not reporting external factors are indicated with *** for significance at the 1%, ** for significance at the 5%, * for significance at the 10%.

Export share: % of revenue derived from exports. The *Price adjustments due to competition* percentage of firms which are likely or very likely to follow their competitors when they decrease. *Degree of competition intensity:* percentage of firms for which competition is severe or strong.

The *Business conditions* variable compares sales in the year of the survey relative to the previous year and takes values from 1 to 5: 1=sales were much lower, 2=sales were lower, 3=sales were about the same, 4=sales were higher and 5=sales were much higher. The *Wages have been kept stable* column reports the percentage of firms indicating that they kept wages flat at some point during the last five years.

Table A.3.4: Conduct and performance characteristics of firms taking external factors into account (Panel B countries)

	Export share	Price adjustments due to competition	Degree of competition intensity	Business conditions	Wages have been kept stable	Wages have been reduced in nominal terms
FR	19.6 (16.5)	60 (50)		3.7 (3.5)	3.0 (1.8)	9.5 (7.3)
IT	26.4 (20.5)	60 (50)	N/A	3.6 (3.5)	5.2 (2.4)	0.4 (11.0)
PL	15.3 (12.3)	70 (60)		3.7 (3.6)	9.6 (8.7)	4.4 (3.1)

Notes: Mean value of each variable for firms reporting that external factors (options c or d of Question I) are important or very important (i.e. have a score of 3 or 4 in either option – note that this differs from what is reported in the main text where the simple average of the scores on the two options are reported) in determining the wages of new entrants. The average value of each variable for firms not reporting external factors as being important is reported in parentheses. [Significance of differences has not been indicated.]

Table A.3.5: Workplace and workforce related characteristics of firms taking external factors into account

	Firm-level agreement	Collective agreement at any level	Labour costs	Variable pay	Skilled workers dominant group	Tenure more than 5 years	Gross flows
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Countries selecting a single option in Question I							
AT	16 (23)	97 (98)	42.7** (34.9)	13.1* (7.8)	75 (65)	54.7 (54.0)	40.9 (39.5)
BE	21 (28)	98 (99)	33.5 (32.7)	10.3 (7.3)	43*** (26)	N/A	40.2 (39.7)
CZ	41 (53)	41* (55)	31.9 (30.0)	18.6 (19.7)	16 (10)	45.5 (49.5)	42.6 (48.8)
EE	4* (10)	5** (12)	34.9*** (28.3)	13.2 (13.9)	66 (59)	40.7** (49.0)	46.4** (37.5)
ES	13 (16)	100 (100)	30.2 (31.0)	3.9 (3.5)	55** (40)	N/A	55.7 (59.9)
GR	32* (22)	92 (91)	40.0 (40.8)	8.2 (7.9)	62* (52)	44.1* (50.0)	43.7 (46.5)
HU	N/A	N/A	32.0 (34.4)	10.2 (10.1)	32*** (23)	38.3*** (44.6)	35.4 (32.1)
IE	13*** (25)	43*** (65)	42.9 (40.1)	13.9* (10.5)	57*** (35)	41.3 (44.7)	34.3 (38.9)
NL	7** (15)	35*** (69)	42.1 (40.7)	9.8* (7.0)	N/A	N/A	36.9 (32.7)
PT	94*** (88)	99* (97)	30.4*** (35.0)	50.7 (49.0)	56*** (73)	45.2* (48.7)	36.4 (34.2)
SI	12* (20)	100 (100)	29.2 (29.5)	20.7 (18.9)	39*** (23)	42.8*** (56.0)	29.6 (29.0)

Notes: Significant differences from the firms not reporting external factors are indicated with *** for significance at the 1%, ** for significance at the 5%, * for significance at the 10%.

The *Firm-level agreement* and *Collective agreement at any level* express the percentage of firms with a collective agreement.

The "Labour costs" variable measures the percentage of labour costs in total costs. The "Variable pay" indicates what percentage of the wage bill is linked to firm-level or individual performance". The *Dominant group of workers by skill* percentage of firms for which the largest group of workers in the firm is made up either of highly skilled blue-collar or highly skilled white-collar workers.

The *Tenure more than 5 years* variable measures the proportion of employees in % with more than 5 years tenure in the company.

The *Gross flows* variable is defined as the sum of the inflow and outflow of workers from a firm over total employment in the firm.

Table A.3.6: Workplace and workforce related characteristics of firms taking external factors into account (Panel B countries)

	Firm-level agreement	Collective agreement at any level	Labour costs	Variable pay	Dominant group of workers by skill	Tenure more than 5 years	Gross flows
FR	60.7 (49.4)		34 (33.8)	11.9 (10.4)	27.7 (27.6)	N/A	26.0 (23.9)
IT	43.3 (38.6)		29.2 (30.8)	6.9 (4.9)	48.4 (40.7)	N/A	31.1 (35.1)
PL	15.2 (18.6)	16.7 (20.4)	30.9 (31.0)	16.2 (14.6)	44.9 (44)	51.4 (55.1)	47.2 (37.1)

Notes: Mean value of each variable for firms reporting that external factors (options c or d of Question 1) are important or very important (i.e. have a score of 3 or 4 in either option – note that this differs from what is reported in the main text where the simple average of the scores on the two options are reported) in determining the wages of new entrants. The average value of each variable for firms not reporting external factors as being important is reported in parentheses. [Significance of differences has not been indicated].

The “Labour costs” variable measures the percentage of labour costs in total costs. The “Variable pay” indicates what percentage of the wage bill is linked to firm-level or individual performance”. The “Dominant group of workers by skill” variable is the percentage of firms for which the largest group of workers in the firm is made up either of highly skilled blue-collar or highly skilled white-collar workers

The “Tenure more than 5 years variable” measures the proportion of employees in % with tenure in the company more than 5 years.

The “Gross flows” variable is defined as the sum of the inflow and outflow of workers from a firm over total employment in the firm.

A.4. Detailed tables corresponding to Section 4

Table A.4.1: Percentage of firms that would pay a higher or lower wage: differences by sector, firm size and firm age

Country	Sector of economic activity						Firm size				Firm age			
	<i>Lower wage</i>			<i>Higher wage</i>			<i>Lower wage</i>		<i>Higher wage</i>		<i>Lower wage</i>		<i>Higher wage</i>	
	Manufacturing	Trade	Business services	Manufacturing	Trade	Business services	Small	Medium and large	Small	Medium and large	Old firms	Young firms	Old firms	Young firms
CZ	7.8	9.6	15.9	14.5	11.5	19.5	16.1*	8.8	14.3	15.4	9.9	10.8	14.7	18.9
EE	13.7	18.8	21.2	19.2	13.0	18.2	17.9	16.4	14.8	20.4	16.1	24.4	18.7	9.8
GR	11.7	7.4	10.4	12.6	15.9	18.6	12.6**	6.1	13.5	18.6	10.4	10.8	14.8**	27.8
HU	10.4	14	12	17.7	13.5	17.0	13.7**	9.7	16.3	16.8	11.1*	15.4	16	18
IT	11.6	12	13.3	23.2	21.4	22.1	9.4*	13.6	16.3***	26.2	N/A	N/A	N/A	N/A
PL	15.3	16.8	15.6	5	2.7	5	16.7	14.8	3.5	5.0	16.2	15.4	3.5	4.6
SI	6.5	4.8	4.3	5.7	5.4	5.5	5.6	5.0	5.3	5.9	N/A	N/A	N/A	N/A
Unweighted average	10.8	12.8	12.5	15.8	11.3***	15.1	12.7**	10.8	11.5***	17	12.3**	15.5	13.7	14.5
Weighted average	11.5	12.4	13.2	20.1	15.8***	18.7	11.5	12.6	13.3***	22.7	12.5	14.1	11.1	13.0

Notes: Firms within each sector (size group, age group) that report they would be prepared to pay a lower/higher wage as a percentage of all firms that have replied to the question. Statistical significance of the differences between the two groups is noted by ***, **, and * for significance at the 1%, 5% and 10% respectively. Weighted averages calculated on the basis of GDP shares. For variable definitions see Notes to Table 3.2.

A.5. Detailed tables corresponding to Section 5

Table A.5.1: Reasons put forward by firms for not paying a lower or a higher wage: differences by sectors of economic activity (firms selecting each reason as a % of firms which have replied they would not pay a different wage)

	Manufacturing				Trade				Business services			
	Lower wage		Higher wage		Lower wage		Higher wage		Lower wage		Higher wage	
	Employer-related reasons	Union-related reasons	Employer-related reasons	Union-related reasons	Employer-related reasons	Union-related reasons	Employer-related reasons	Union-related reasons	Employer-related reasons	Union-related reasons	Employer-related reasons	Union-related reasons
HU	79.6	8.0	81.7	10.2	86.2	5.7	88.1	8.6	79.1	8.9	79.7	14.4
PL	86.7	10.1	84.2	12.4	92.9	4.0	87.6	9.7	91.7	6.0	86.9	11.0
CZ	65.6	28.3	61.5	36.9	72.3	29.8	67.4	30.4	66.7	24.6	59.1	33.3
IT	56.0	42.9	65.5	33.3	56.2	40.7	70.6	28.0	45.4	52.6	57.8	39.9
GR	48.3	51.8	74.1	27.3	62.0	37.0	72.2	27.8	55.4	37.5	70.3	30.7
EE	96.0	2.4	79.7	18.6	94.6	1.8	81.7	13.3	88.5	7.7	74.1	23.5
SI	71.2	27.1	78.4	18.2	77.9	17.1	71.9	21.6	66.9	25.5	66.5	26.5
Unweighted average	71.2	23.2	75.4	20.8	80.0	15.4	81.4	15.5	71.7	20.8	73.7	22.1
Weighted average	59.4	38.7	68.4	30.1	66.9	30.2	75.8	22.4	55.7	40.7	65.2	32.4

Notes: 1. Countries are ranked in the same order as in Table 5.1. 2. The weighted average uses GDP shares for the average.

A.6. Detailed tables corresponding to Section 6

Table A.6.1: Relevance of external factors in determining the new entrants' wages (Ordered probit estimates)

	Wages of similar workers outside the firm			Availability of workers with similar characteristics in the labour market		
	France	Italy	Poland	France	Italy	Poland
Sectoral dummies (Reference group: Manufacturing)						
Trade	0.064 [0.158]	-0.028 [0.111]	0.099 [0.123]	0.276* [0.150]	-0.160 [0.109]	0.021 [0.124]
Business services	-0.150* [0.078]	-0.107 [0.104]	-0.100 [0.130]	-0.071 [0.077]	-0.293*** [0.102]	0.125 [0.131]
Size dummies (Reference group: firms with 50-199 employees)						
5-19 employees	-0.128 [0.100]	-0.078 [0.313]	0.151 [0.131]	-0.217** [0.099]	-0.226 [0.277]	0.025 [0.132]
20-49 employees	0.009 [0.079]	-0.052 [0.098]	0.207 [0.145]	-0.080 [0.078]	-0.031 [0.096]	0.132 [0.146]
200 employees and over	0.349*** [0.067]	0.250** [0.104]	0.180 [0.182]	0.098 [0.066]	0.186* [0.103]	0.199 [0.182]
Dominant skill group dummies (Reference group: Low-skilled blue collar)						
High-skilled blue collar	0.108 [0.092]	0.156 [0.111]	0.021 [0.127]	0.086 [0.090]	0.153 [0.108]	-0.014 [0.127]
Low-skilled white collar	0.385*** [0.128]	0.364*** [0.129]	-0.044 [0.157]	0.299** [0.127]	0.205 [0.127]	-0.184 [0.157]
High-skilled white collar	0.836*** [0.105]	0.662*** [0.108]	-0.009 [0.137]	0.479*** [0.103]	0.504*** [0.107]	-0.005 [0.139]
Other workforce characteristics						
% of employees with tenure longer than 5 years			-0.185 [0.147]			-0.252* [0.147]
% of wage bill related to variable pay	0.278** [0.118]	0.748** [0.345]	-0.078 [0.316]	0.095 [0.115]	0.323 [0.332]	0.406 [0.314]
Business environment in which the firm operates						
Competition dummy (1=more competition)	0.192*** [0.055]	0.243*** [0.083]	0.402*** [0.105]	0.131** [0.054]	0.226*** [0.082]	0.282*** [0.104]
Sales revenue performance dummies (Reference group: Sales much higher than in the previous year)						
Much lower sales	-0.171 [0.114]	-0.123 [0.215]	-0.037 [0.224]	-0.368*** [0.111]	-0.053 [0.209]	-0.172 [0.222]
Lower sales	-0.181** [0.078]	0.060 [0.142]	0.145 [0.160]	-0.228*** [0.078]	0.086 [0.138]	0.316* [0.163]
Sales flat	0.080 [0.091]	0.037 [0.100]	0.181 [0.146]	-0.166* [0.090]	0.011 [0.098]	0.185 [0.146]
Sales much higher	0.070 [0.068]	0.085 [0.122]	0.270** [0.121]	-0.068 [0.067]	0.005 [0.119]	0.167 [0.123]
Firm-level collective agreement	0.164*** [0.058]	0.001 [0.087]	-0.523*** [0.144]	0.121** [0.058]	0.132 [0.085]	-0.213 [0.140]
Observations	1669	735	525	1683	740	523
Log-likelihood	-2012.94	-890.07	-652.32	-2125.48	-950.26	-650.87

*** p<0.01, ** p<0.05, * p<0.1

Notes: See notes to Table 6.2.

A7. Information on institutional settings and labour market performance

Data from the NCB questionnaire on national collective wage bargaining

- (i) *Typical level of wage bargaining:* Countries were asked to indicate which amongst the following levels which is/are the typical level(s) at which wage bargaining occurs: National, Regional, Inter-sectoral, Sectoral, Occupational or Company level. This information is collected for 4 distinct sectors (primary, industry, market services and non-market services) and for the economy as a whole. The total economy indicator is presented in Table 1 of this paper.
- (ii) *Level of coverage by collective pay agreements:* Four levels of collective bargaining coverage have been distinguished: very low if less than 25% of employees are covered by a collective agreement, low if 26%-50% of employees are covered, moderate if 51%-75% of employees are covered and high if 76%-100% of employees are covered. Information is collected for 4 distinct sectors (primary, industry, market services and non-market services) and for the economy as a whole. The total economy indicator is presented in Table 1 of this paper.

Other data

- (i) *Employment Protection Legislation Index:* The index presented is version 2 of the 2003 OECD Employment Protection Legislation Index the construction of which is described in detail in Chapter 2 of OECD (2004). Version 2 differs from Version 1 of the index in that the former takes account specific requirements for *collective* dismissals.
- (ii) *Minimum wages:* Of the countries participating in the survey the following do not have a statutory minimum wage: Austria, [Germany], Italy. Of those with a statutory minimum wage a sub-minimum wage for youth exists in the following 6 countries: Belgium, Czech, Ireland, [Luxembourg], Netherlands, and Poland.

Table A7.1: Additional information on institutional features

Country	Existence of extension procedures	Automatic extension procedures
AT	No	
BE	Yes	No
CZ	No	No
DE	No	
FR	Yes	No
GR	Yes	No
HU	Yes	No
IE	Yes	Yes
IT	Yes	Yes
NL	Yes	No
PL	Yes	Yes
PT	Yes	
SI	Yes	
ES	Yes	Yes

Source: Du Caju et al. (2008).

Table A.7.2: Standardised unemployment rates in %, 1990-2007

	1990	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Austria	..	3.9	3.9	4.3	4.4	4.5	3.9	3.7	3.6	4.2	4.3	4.8	5.2	4.8	4.4
Belgium	6.6	9.8	9.7	9.5	9.2	9.3	8.5	6.8	6.6	7.5	8.2	8.4	8.5	8.2	7.5
Czech Republic	..	4.4	4.1	3.9	4.8	6.4	8.6	8.7	8	7.3	7.8	8.3	7.9	7.1	5.3
France	8.5	11.7	11.1	11.6	11.5	11	10.4	9	8.3	8.6	9	9.3	9.3	9.2	8.3
Germany ^a	4.8	8.3	8.0	8.6	9.2	9	8.2	7.5	7.6	8.4	9.3	9.8	10.6	9.8	8.4
Greece	6.3	8.8	9.0	9.7	9.6	11	12	11.2	10.6	10.3	9.7	10.5	9.9	8.9	8.3
Hungary	..	11.0	10.4	9.6	9.0	8.4	6.9	6.4	5.7	5.8	5.9	6.1	7.2	7.5	7.4
Ireland	13.4	14.3	12.3	11.7	9.9	7.6	5.7	4.2	4	4.5	4.7	4.5	4.3	4.4	4.6
Italy	8.9	10.6	11.2	11.2	11.3	11.4	11	10.1	9.1	8.6	8.4	8	7.7	6.8	6.1
Luxembourg	1.7	3.2	2.9	2.9	2.7	2.7	2.4	2.3	2	2.7	3.7	5.1	4.5	4.8	4.7
Netherlands	5.9	6.8	6.6	6.0	4.9	3.8	3.2	2.8	2.3	2.8	3.7	4.6	4.7	3.9	3.2
Poland	..	14.4	13.3	12.3	10.9	10.2	13.4	16.1	18.2	19.9	19.6	19	17.7	13.8	9.6
Portugal	4.8	6.9	7.3	7.3	6.8	5	4.4	3.9	4	5	6.3	6.7	7.6	7.7	8
Slovenia															
Spain	13.0	19.5	18.4	17.8	16.7	15	12.5	11.1	10.4	11.1	11.1	10.6	9.2	8.5	8.3

Notes: The data for Germany in 1990, data refer to western Germany; subsequent data concern the whole of Germany.

Source: OECD (2007), Employment Outlook, Table A, p.245 and Main Economic Indicators, data extracted on the 6th June 2008.