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**DOWNWARD WAGE RIGIDITY IN  
SLOVENIA: EVIDENCE FROM A  
SURVEY OF FIRMS**

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# DOWNWARD WAGE RIGIDITY IN SLOVENIA: EVIDENCE FROM A SURVEY OF FIRMS

Urban Sila and Manca Jesenko\*

## ABSTRACT

*In this paper we focus on downward wage rigidity in Slovenian firms using firm-level survey data on wage-setting behaviour. We find that there is a strong presence of wage rigidity among Slovenian firms. Very few firms ever cut or freeze wages. Similarly, there is a strong practice of adapting wages to inflation. Wages tend to be more rigid in Slovenia than in other European countries on average. Slovenian firms are reluctant to cut wages because they fear that this would reduce the effort of employees in the company and that cutting wages may induce the best employees to leave the company.*

## POVZETEK

*Prispevek obravnava rigidnost plač v slovenskih podjetjih na podlagi analize anketnih podatkov podjetij, pridobljenih v okviru projekta o dinamiki plač in stroških dela. Rezultati kažejo, da je med slovenskimi podjetji prisotna močna rigidnost plač navzdol. To se odraža v nizkem deležu podjetij, ki so v omejenem časovnem obdobju bodisi znižala bodisi zamrznila plače, in v visokem deležu anketiranih podjetij, ki plače prilagajajo inflaciji. Primerjava z drugimi evropskimi državami kaže, da so plače v Sloveniji nadpovprečno rigidne. Med najpogosteje navedenimi razlogi, zaradi katerih anketirana podjetja nerada znižujejo plače, sta predvsem bojazen, da bi to znižalo napor zaposlenih v podjetju in, da bi zniževanje plač povzročilo odhod najboljših delavcev.*

JEL Codes: J31, J32, J33

Keywords: Downward wage rigidity, wages, wage indexation, Slovenia

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# 1 Introduction

Wage rigidity is important from the perspective of effective monetary policy. As argued by Tobin (1972), if nominal wages are rigid downward, then it is optimal for the economy to keep a small positive level of inflation in order to facilitate relative real wage adjustments in the labour market. By this argument, an inflation rate too close to zero would lead to a higher unemployment rate and lower output than optimal (Akerlof et al., 1996). Moreover, in many countries, not only are nominal wages rigid downwards, but they actually grow with rises in prices, preserving the real value of wages. To the extent that nominal wages follow the inflation rate, there exists downward rigidity of *real* wages. However, conversely to the above, in the case of complete real wage rigidity the real wages are constant and monetary policy does not have any effect on the adjustments in the labour market.

The extent of wage rigidity is a question of empirical nature. Recently, much research has been done on this topic and there is a growing consensus that there are important wage rigidities in labour markets.

Authors usually look at the data on wages and they compare the observed distribution of wages to the notional distribution of wages, derived under the assumption of no downward wage rigidity. With the measures of wage rigidity authors wish to measure the fraction of wage cuts prevented due to the presence of downward rigidity. Altonji and Devereux (1999) and Lebow et al. (2003) report extensive downward rigidity in nominal wages for the US. Smith (2000) and Nickell and Quintini (2003) find statistically significant rigidity of wages for the UK, but of a much lesser extent than in the US. Similarly, wage rigidity is reported by Fehr and Goette (2005) for Switzerland, Heckel et al. (2008) for France and Babecky et al. (2009) for European countries. Brzoza-Brzezina and Socha (2007) and Gertler and Senaj (2009) report that in Poland and Slovakia, respectively, the extent of nominal wage rigidity is small. Dickens et al. (2007), Holden and Wulfsberg (2008) and Knoppik and Beissinger (2009) find large heterogeneity in nominal wage rigidity across countries. With regards to the real wage rigidity, Dickens et al. (2007) report evidence in support of the presence of real wage rigidity across

countries, Du Caju et al. (2007, 2009) find extensive real wage rigidity in Belgium and Babecky et al. (2009) report real wage rigidity for European firms<sup>1</sup>.

Strong evidence in favour of the presence of downward wage rigidity is also found by authors who surveyed firms about their wage-setting behaviour. Blinder and Choi (1990), Akerlof et al. (1996), Campbell and Kamlani (1997), Bewley (1998), Agell and Lundborg (2003) and Agell and Bennmaker (2007) report that managers are very reluctant to cut wages, and they are willing to do so only if their companies are under great financial strain. In this literature firms were also asked about potential sources of wage rigidity. The responses indicate that managers are reluctant to cut wages in order to keep good morale. Wage-cuts are not a good alternative to layoffs because they are considered unfair by workers and may hurt work effort and productivity in the company. Furthermore, managers believe that wage cuts increase turnover and may result in good workers quitting the company.

In this paper we analyze the downward rigidity of wages for Slovenian firms. Our data is based on the survey of firms that was conducted within the framework of the Wage Dynamics Network (WDN), a research network sponsored by a consortium of Central Banks of the EU and coordinated by the European Central Bank (ECB). In the survey, firms were asked about their wage-setting behaviour with regards to frequency of wage-cuts and indexation of wages to inflation. The data contains other firm-level characteristics, which can be used to analyse determinants of wage rigidities from perspective of firms.

The results show that that there is a strong presence of wage rigidity among Slovenian firms. Less than 4% of interviewed firms have ever cut or frozen wages in the last five years. Similarly, there is also strong practice of adapting wages to inflation, with 52% of firms applying some kind of policy of adapting wages to inflation. The evidence shows that wages are more rigid in Slovenia compared to other European countries included in the survey. Slovenian firms are reluctant to cut wages because they fear that this would reduce the effort of employees in the company and that cutting wages may induce the best employees to leave the company.

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<sup>1</sup> Parallel evidence is obtained from so-called "wage equations" that relate changes in wages to aggregate unemployment rate and inflation. Campbell (1997) finds evidence of wage rigidity for the US, and Schweitzer (2007) reports that wages have become, if anything, *less* flexible over time for the UK.

The rest of the paper is structured as follows. In Section 2 we briefly discuss the macroeconomic environment during the reference period and in section 3 we report basic measures of wage rigidity. In Section 4 we discuss the wage-setting in Slovenia, possible sources of wage rigidity and how wage rigidity relates to firm characteristics. Section 5 concludes.

## 2 Macroeconomic Environment

With respect to downward wage rigidity it is important to know what kind of macroeconomic environment firms operate in. It has been noted in the literature (Nickell and Quintini, 2003) that the extent of observed wage rigidity should vary with the inflation rate in the economy. Naturally, in periods of high inflation it is rare to observe any nominal wage cuts, thus researchers analysing periods of high inflation could overstate the extent of downward nominal wage rigidity (Agell and Lundborg, 2003). Ideal environment for analysing downward nominal rigidity are times of low inflation when nominal wage rigidity is binding.

In Table 1 we show the inflation rate, GDP growth and unemployment rate for Slovenia and for the EU-25 for the 2002-2006 period. This period is chosen because in the WDN questionnaire firms were asked to use five years up to the year 2006 as a reference period in their answers.

It can be seen from Table 1 that the economic environment in Slovenia was relatively stable. Although the inflation rate was high at the beginning, in the last few years it was moderate. In the years 2005 and 2006, time when Slovenia was preparing for the adoption of the euro<sup>2</sup>, the inflation rate was 2.5%. Before that inflation rate was higher; in the year 2002 for example it reached 7.5%. The inflation rate in the EU-25 was in general lower and more stable throughout the observed period, at around 2.1% on average.

Annual GDP growth in Slovenia was on average 4.3% and the unemployment rate remained between 6.0% and 7.0% for the whole period. In the EU-25 GDP growth was lower, between 1.2% and 3.1%, whereas the unemployment rate was higher, at around 9.0%. We conclude that the 2002-2006 period is suitable for analyzing the effects of downward wage rigidity. However, due to higher inflation and higher GDP growth in Slovenia, it is likely that downward wage rigidity was less binding in Slovenia than on

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<sup>2</sup> Slovenia adopted the euro on 1<sup>st</sup> January 2007.

average in other European countries. Therefore, in the analysis that follows, the rigidity of wages in Slovenia might be overstated.

### **3 Downward Wage Rigidity**

#### **3.1 The Data**

Our data is based on the survey of firms that was conducted within the framework of the Wage Dynamics Network (WDN), a research network sponsored by a consortium of Central Banks of the EU and coordinated by the European Central Bank (ECB). The survey questionnaire is shown in the Appendix. In the survey, firms were asked about their wage-setting behaviour with regards to frequency of wage-cuts and indexation of wages to inflation. The data contains other firm-level characteristics, which can be used to analyse determinants of wage rigidities from perspective of firms. 15 EU countries were included in the Survey: Austria, Belgium, the Czech Republic, Estonia, France, Greece, Hungary, Ireland, Italy, the Netherlands, Lithuania, Poland, Portugal, Slovenia and Spain.

In Slovenia the survey was conducted in the first quarter of 2008. The target population were firms with 5 employees or more. The sample of 3,000 firms was selected from the Slovenian business register through a stratified sampling technique, where strata were defined according to the sector and the size of firms. At the end, data on 681 firms was obtained, which corresponds to a 22.7% response rate. In comparison, for all 15 EU countries included in the survey, the response rate was around 33% on average, ranging from 9% in Greece to 73% in Poland.

In Slovenia the response rate differed considerably across sectors and size categories, with larger firms considerably more likely to respond (62.3%) than smaller firms (16.3%). The employment-weighted response rates were thus considerably higher due both to the over-sampling of larger firms and their higher response rates: complete responses were received from firms that comprise 60.3% of the total employment of firms. More details about the sample and response rate to the WDN Survey in Slovenia can be found in Vodopivec (2010).

In our calculations we use weights provided in the data. Weights within each country are used in such a way that weight-adjusted measures are consistent with the composition of firms across sectors at the national level. When putting together data from different

countries, weights also adjust for the relative number of firms across countries. Bigger countries thus naturally have bigger impact. It should be noted that reported measures are not adjusted for the number of employees across firms, and that they are to be interpreted in terms of firms rather than in terms of employees. For example, in analysing a particular survey question, results are reported in terms of number of firms that gave a particular answer, rather than number of employees "covered" by a particular behaviour of firms.

In order to facilitate the interpretation of various measures of wage rigidity, we compare values for Slovenia with values of the measures for the whole sample, euro area and non-euro area countries, which serve as a benchmark<sup>3</sup>.

### **3.2 The Meaning of Wage Rigidity**

First, let us discuss in more detail the exact meaning of wage rigidity in the context of this paper. We are primarily interested in so called "nominal wage rigidities" as described in Blanchard (2006), page 16. These capture the speed at which nominal wages adjust to changes in prices, that is, by how much real wages decrease in response to an unanticipated increase in prices. The slower the adjustment of (nominal) wages to prices, the higher is wage rigidity and the more power monetary authorities have to use inflation in order to reduce real wages.

It is important to note that "nominal wage rigidities" must not be confused with downward rigidity of *nominal* wages or downward rigidity of *real* wages. In fact, both rigidity of nominal wages and rigidity of real wages correspond to a concept of "nominal wage rigidities" of Blanchard (2006), as both have to do with adjustments of nominal wages to changes in prices<sup>4</sup>.

In the case of perfectly flexible wages, companies can respond to adverse shocks by adjusting wages, and there is no scope for monetary policy to facilitate changes in the labour market. On the other hand, downward rigidity of *nominal* wages implies that wages cannot be reduced in nominal terms and in the face of adverse shocks companies cannot adjust wages downwards. Nevertheless, by keeping the inflation rate at some positive level, there is a scope for monetary authority to facilitate adjustments in the

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<sup>3</sup> Recall that in 2006 the following countries included in the WDN Survey were part of the Euro: Austria, Belgium, France, Greece, Ireland, Italy, the Netherlands, Portugal and Spain.

<sup>4</sup> Blanchard also mentions "real wage rigidities" that capture the speed at which, for given unemployment, workers would accept a slowdown in actual wages in response to a productivity slowdown. This set of rigidities hence relates movements in wages to movements in productivity.



labour market, because wages can be adjusted in real terms. Finally, downward rigidity of *real* wages implies that not only are nominal wages rigid downwards, but they are actually required to grow in line with the inflation rate. In a situation like this, companies are required to keep real wages from falling, and adjustments in the labour market cannot be facilitated by the monetary authority.

From this discussion it is apparent that downward rigidities of nominal and real wages are related. In times of positive inflation, real wage rigidity implies nominal wage rigidity<sup>5</sup>. It is reasonable to expect that if workers do not allow real wages to fall they will not allow their nominal wages to be lowered either. However, despite this relation between the two rigidities, their implication for monetary policy, as discussed above, is very different. That is why in some papers, such as Dickens et al. (2007), Du Caju et al. (2007, 2009) and Babecky et al. (2009), nominal and real wage rigidity are analysed as two distinctive phenomena.

In this paper, empirically we do not draw a strict distinction between rigidity of nominal and real wages. The reason is that with our data it is not sensible to draw such a clear distinction. Those authors that observe individual wage changes can easily distinguish between wage changes clustered around zero and wage changes clustered around the inflation rate. In this way they can distinguish between real and nominal wage rigidity. For each individual (or sector) they observe one wage change only. In our case, on the other hand, we operate with the data from the survey. Companies are asked, for example, two separate questions: whether they ever cut wages and whether they adjust wages to inflation. These two questions are not mutually exclusive; not cutting wages and adjusting wages to inflation are both possible, implying both nominal and real wage rigidity. Furthermore, even if we know that a particular firm adjusts wages to inflation in our data we lack the information whether the indexation of wages is perfect or only partial.

Therefore, given that real wage rigidity implies nominal wage rigidity we do not think that the two rigidities can be treated separately, and they definitely cannot be treated as mutually exclusive like in Babecky et al. (2009). Results of this paper will simply be interpreted in terms of wage rigidity in general.

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<sup>5</sup> However, in such circumstances some authors would say that nominal wage rigidity is *not binding*.

### **3.3 Downward Wage Rigidity in Slovenia**

Let us now turn to assessing downward wage rigidity in Slovenia. In Table 2 we report responses of firms to two survey questions: "Has base wage ever been frozen in the last five years?" and "Has base wage ever been cut in the last five years?". For both questions we interpret "No" as an answer that indicates the presence of downward wage rigidity. Normally, nominal wages grow over time due to positive economic/productivity growth and positive inflation. However in response to adverse economic shocks, firms might attempt to freeze or cut wages. If they are not able to do that, that would be the sign of a downward rigidity of wages. Hence, according to our interpretation, in an environment of positive inflation, wage freezes indicate an absence of (real) wage rigidity and wage cuts indicate an absence of (nominal and real) wage rigidity.<sup>6</sup>

Table 2 provides evidence that very few Slovenian firms ever froze or cut wages in the five years prior to the survey, 3% in both cases. Looking at the whole WDN sample, wage rigidity is present in all countries: 10% of firms answered they had frozen wages at least once in the last five years, and only 4% of firms answered they had cut wages in the same time period. The proportion of firms who froze wages is slightly higher in the euro (13%) than in the non-euro area (9%), whereas the proportion of firms cutting wages is a bit higher in the non-euro (5%) than euro area (2%). Compared to the rest of Europe, wage rigidity in Slovenia appears to be somewhat stronger. The proportion of Slovenian firms who froze wages (3%) is much lower than the average proportion for both the euro and non-euro area, while the estimated proportion of Slovenian firms who cut wages (3%) is between the ones for euro and non-euro area.

The high observed wage rigidity in Slovenia could simply be the consequence of the fact that in the 2002-2006 reference period there was little scope for cutting or freezing wages due to healthy economic growth and positive inflation. Nevertheless, given the very low percentages of firms displaying no wage rigidity according to this question, the evidence in support of wage rigidity in Slovenia appears quite stark. It should also be noted, that even when the whole economy exhibits a positive growth, individual companies are still

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<sup>6</sup> Babecky et al. (2009) also use data from the WDN Survey, but in some cases their interpretation differs from ours. In particular, they interpret answering "Yes" to the question "Has base wage ever been frozen in the last five years?" as indicating the presence of downward wage rigidity. They argue that in cases where wages should be lowered they become frozen instead, indicating downward nominal wage rigidity. We believe, on the contrary, that wage freezes are normally used in the context where firms are unwilling/unable to keep rising wages with inflation and hence they freeze them instead. Therefore, freezing wages actually indicates downward flexibility of real wages.

exposed to idiosyncratic shocks and certainly there were companies that got hit by adverse economic shocks in the five years period.

Some information on this can be obtained from the survey. Firms were asked whether the revenue in the reference period (2006) was lower (-2% or more), higher (+2% or more) or about the same, compared to the previous year. Consistent with more rapid growth in Slovenia, higher share of firms reported a rise in revenues (64%) compared to the total sample (51%). On the other hand, despite higher growth and inflation in the reference period compared to other countries, 19% of Slovenian firms reported falling revenues in comparison to 17% in the total sample. Hence, according to this measure about the same share of firms in Slovenia and the rest of Europe would potentially want to cut labour costs. This strengthens the belief that wage rigidity in Slovenia indeed seems to be stronger than average.

Another piece of evidence shedding light on downward rigidity of wages can be obtained from the hypothetical survey questions about reactions of firms to possible demand and supply shocks. In the whole sample (euro and non-euro countries), out of those firms that answered that cutting costs would be an important way to react to adverse economic conditions, only 3% of firms thought that cutting wages would be the most important factor for reducing costs in the case of an adverse demand shock, and 2% in the case of an adverse supply shock. In the sample of Slovenian firms, none indicated cutting wages as the most important factor for reducing costs in the case of demand or supply shock. This is another piece of evidence in support of wage rigidity and it also indicates that wage rigidity might be stronger in Slovenia as compared to other countries<sup>7</sup>.

Next we turn to an important source of (real) wage rigidity – indexation of wages with respect to inflation. Firms were asked about the existence of a policy that adapts changes in base wages to inflation and in what way base wages are linked to inflation. The answers are reported in Table 3. Out of the interviewed Slovenian firms, 52% use a policy that links base wages to inflation. 19% of firms link base wages to (expected or past) inflation automatically, and the remaining 34% of firms adjust wages to inflation, but the adjustment is not automatic.

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<sup>7</sup> Hypothetical questions of this sort can potentially circumvent the problems with comparability across countries due to differences in macroeconomic environment. When firms are asked whether they ever cut wages their answers depend on current economic conditions. In contrast, hypothetical questions are less prone to this.

A policy of linking base wages to inflation is much less common in other countries in Europe; 30% of euro area firms and 27% of non-euro area firms adapt wages to inflation. Interestingly, automatic adjustment of base wages to inflation in Europe (19%) is as common as for Slovenian firms, but non-automatic way (12%) of doing so is less common than in Slovenia. Therefore, also according to this measure downward wage rigidity seems more prevalent in Slovenia than in Europe as a whole.

## **4 Sources of Downward Wage Rigidity**

### ***4.1 Wage-Setting and Rigidity of Labour Costs***

In this section we analyse in greater detail questions from the WDN Survey that shed light on the wage-setting process in Slovenia and the attitude of firms towards wage cutting. With this we attempt to identify sources of downward wage rigidity.

In most labour markets, wages are set according to some kind of collective agreement between employers and employees. In the WDN Survey, there is a question asking whether collective agreement is set at the level of the firm or at some higher level. We report responses to this question in Table 4. It is evident that in Slovenia, as well as in the euro area, firms mostly apply collective agreement at the level above the firm; 89% firms in Slovenia and 87% firms in the euro area apply an outside level wage agreement. This evidence is in line with the analysis of labour market institutions across countries for the year 2006 by Du Caju et al. (2008). They report that in Slovenia the sectoral level is the dominant one for wage bargaining. Furthermore, in firms where there are company level wage agreements, these cannot be less favourable than sectoral agreements and even if firms can legally avoid sectoral level clauses these “escape clauses” were scarcely used in 2006.

During the 2002 – 2006 period the general direction of the private sector wage-setting in Slovenia was set by tripartite agreements between the Government, employers' organisations and trade unions. With the goal of reducing inflation and facilitating entry into the EU's Exchange Rate Mechanism 2 (ERM 2) at the end of 2004, and subsequently introducing the euro single currency, it was agreed that wage growth should lag behind productivity growth by at least one percentage point. This effectively resulted in reduction of the "real wage rigidities" of the sort mentioned in the footnote 4. On the other hand, the tripartite agreements retained (partial) indexation of wages to domestic inflation.

Given that the provisions of sector- or firm-level collective agreements are required to be at least as favourable as those in the tripartite agreements, it is perhaps surprising to find that only 52% of Slovenian firms report that they adjust base wages to inflation (Table 3). It is not clear what the source of this disparity is. It is possible that firms experiencing rapid growth increase wages at a higher rate than the prevailing inflation and hence do not consider inflation as a factor in wage determination. Alternatively, there could be a problem of interpretation on the part of the respondents. It should be noted, however that similar disparity appears for the firms in the euro area. A majority of firms in the euro area apply an outside level agreement (87%), which, in many countries, implies partial indexation of wages to inflation. Nevertheless, only 30% of them report adjusting wages to inflation.

What are the implications of the type of wage-setting used by firms for the downward wage rigidity? From the literature it seems that in sectors and firms with more centralized wage bargaining, wages tend to be more rigid. Messina et al. (2009) analyse wage rigidity in Belgium, Denmark, Spain and Portugal and find that the use of firm-level collective agreements has a negative impact on real wage rigidity. They explain this by the existence of a wage cushion and the ability of unions, when negotiating at a decentralized level, to adapt to the particular conditions of the firm. Similarly, Du Caju et al. (2009) report that in Belgium wages are more rigid in sectors with wage-setting at the sector level as opposed to firm-level wage agreements. We cannot take the reported evidence as conclusive for Slovenia, but it suggests that highly centralised wage-setting could serve as one of the sources of high wage rigidity in Slovenia.

In Table 5 we report the share of the total wage bill that is paid for performance related bonuses and the remuneration principle most relevant for the main occupation group, as reported by the companies in the WDN Survey. With the information in Table 5 we can get a better idea about the possibilities that companies have in adjusting their labour costs. For example, a higher presence of flexible wage components such as bonuses indicates that firms could lower their wage bill without necessarily cutting base wages. If companies are able to manipulate bonuses and other flexible-pay components, then in such a way they can circumvent the rigidity of base wages. Similarly, by relating base wages more closely to performance, as indicated by different remuneration principles, firms can make base wages more linked to the actual output and hence more "flexible".

From Table 5 it can be seen that with respect to the base wage remuneration principle, the most frequently used principle in all countries is the monthly base wage principle. It is used by 72% of Slovenian firms. Slovenia tends to have a relatively high importance of hourly base wage remuneration, 25% compared to 18% in the total sample, which may indicate a potential source for lower wage rigidity in Slovenia. On the other hand the most "flexible" remuneration principle – piece-rate base wage principle – is relatively less important in Slovenia with 2% of firms compared to 8% in the total sample.

In Slovenia on average 21.1% of total wage bill is allocated to performance related bonuses. Interestingly, this is about twice as high as in other countries in the sample, on average. Therefore, despite facing more rigid base wages compared to other countries, as reported in Table 2 and Table 3, Slovenian companies could perhaps more easily cut wages via the route of flexible wage components. With our data we cannot examine this further. However, it is important to stress that not all authors find evidence in support of the idea that flexible pay components are used by companies to cut wage costs. Lebow et al. (2003) report that benefits add some additional flexibility to compensation of employees. Yet, this increased flexibility does not seem to reflect deliberate attempts by firms to circumvent downward wage rigidity using benefits. On the other hand, Du Caju et al. (2009) report that bonuses tend to lower downward real wage rigidity and Altonji and Devereux (1999) also find that reductions in annual bonuses are quite common among salaried workers.

In relation to this in Table 6 we report responses of firms to a question about the measures that they use to cut labour costs. Firms were presented with a list of measures for reducing labour costs and they were then asked to indicate which ones had ever been used by the firm. First, 66% of Slovenian firms have never used any measures to reduce labour costs, as can be seen from the last column on the right hand side of Table 6. This suggests that Slovenian firms are reluctant to cut labour costs, and even more so compared to firms in other countries<sup>8</sup>. In the total sample, 59% of firms have never cut labour costs in the reference period, 45% in the euro area and 61% in the non-euro area, consistent with the evidence in favour of downward rigidity of wages.

Among various measures to cut labour costs, the most popular measures in Slovenia are cutting non-pay benefits (13% of firms), cutting bonuses (9%) and hiring new cheaper

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<sup>8</sup> Using the chi-squared test, however, the differences in Table 6 are not statistically significant.

workers (9%), although they have been used only by the minority of firms. These three measures, together with slowing/freezing promotions, also tend to be the most popular among firms in the whole sample. There is evidence that cutting bonuses is less popular in Slovenia (9%) than in the total sample (17%), lending further evidence that in Slovenia in particular, cutting bonuses is not used to circumvent the downward rigidity in base wages.

#### **4.2 Downward Wage Rigidity and Behaviour of Firms**

From the evidence reported so far it seems that firms are reluctant to cut labour costs. They rarely cut base wages, but they also seem reluctant to cut bonuses or other labour costs. What are the reasons for this kind of behaviour? As has been reported by Blinder and Choi (1990), Akerlof et al. (1996), Campbell and Kamlani (1997), Bewley (1998), Agell and Lundborg (2003) and Agell and Benmaker (2007), managers are very reluctant to cut wages in the fear that this could damage the employees' morale. Wage-cuts are considered unfair by workers and may hurt work effort and productivity in the company. They increase costly turnover and may result in good workers quitting the company.

With the data available from the WDN Survey of firms we can also explore some of these questions. Firms were not only asked whether they had ever cut base wages, but they were also asked about the most relevant reasons that prevented them from cutting wages. Respondents were provided with a list of possible reasons, and for each of them they indicated the relevance they believed it played in preventing wage cuts. In Table 7 we report the results for a number of reasons, where 0 denotes "not relevant", 1 denotes "relevant or of little relevance" and 2 denotes "very relevant".

Looking at the results it is noticeable that responses vary across countries; however, in general the results are very much in line with the aforementioned literature. According to the percentage of firms that indicated "very relevant", the most important factors preventing wage cuts in Slovenia are the fear that best employees may leave the company (57%) and that cutting wages would reduce effort and output or negatively impact employees' morale (56%). In the total sample with all countries included the same two reasons show the highest relevance, 50% and 30% of firms, respectively.

The least relevant factor preventing wage cuts according to companies, and this holds for Slovenia as well as for the total sample, is regulation or collective agreement. 25% of

Slovenian firms and 56% of firms in the total sample indicated this factor as "not relevant". This reinforces the interpretation that managers are reluctant to cut wages for reasons within a firm (fairness, workers morale) rather than for outside reasons (regulation). Managers are reluctant to cut wages not necessarily because they cannot do so, but primarily because they do not want to, as it may harm the company.

Further evidence that managers care a lot about considerations of fairness and morale is shown in Table 8 and Table 9. The information in the tables refers to WDN Survey questions about setting of wages for new employees. Table 8 reports responses of firms to the survey question asking how companies determine wages of new entrants. Firms were presented with a list of factors and were then asked to identify the most relevant one. The results suggest that by far the most important factor determining wages of new entrants are wages of existing employees, for 63% of Slovenian firms and for 52% of all firms in the sample. For Slovenian companies in particular, the availability of similar workers matters very little, 6%. This is evidence consistent with the idea that fairness within a firm is of great importance when setting wages to employees. Supply and demand factors, such as availability of similar workers, are therefore of lesser importance compared to considerations of fairness and workers' effort.

This is also confirmed in Table 9, where we report reasons why firms do not offer higher or lower wages to new employees as compared to existing workers of comparable ranking. First, in the left-most column we report percentage of companies that answered "yes" to a question whether they offer lower/higher wages to new employees. Only a handful of firms would ever offer lower or higher wages to new employees, and this percentage is especially low in Slovenia, 8% for "lower wage" question, and 4% for "higher wage" question. What is even more interesting, are the reasons that firms cite for this kind of behaviour. Most important factors that prevent firms from offering different wages to new employees are that firms believe this would lower effort/productivity of workers and would be considered unfair. In Slovenia this is prevented also by regulation and collective agreements, which is captured by the response "No, not allowed". Because of this reason, 17% of Slovenian firms wouldn't offer lower wages and 12% wouldn't offer higher wages, but this is of low importance compared to the first two reasons.



### **4.3 Downward Wage Rigidity and Firm Characteristics**

In this section we study the effects of selected firm characteristics on wage rigidity in Slovenia. In the literature, various firm or sector level characteristics have been identified to influence wage rigidity. Du Caju et al. (2009) find that downward real wage rigidity is significantly higher for white-collar workers and lower for older workers and for workers with higher earnings and bonuses. They find that wages are more rigid in more competitive sectors, in labour-intensive sectors, and in sectors with predominant centralised wage setting. Similar findings are reported for Belgium by Du Caju et al. (2007); real rigidity is found to be stronger for white-collar workers than for blue-collar workers and it decreases with age and wage level. Finally, smaller firms appear to have more rigid wages. Brzoza-Brzezina and Socha (2007) find that in Poland rigidity is smaller in highly competitive sectors.

For this purpose we run logistic regression with indicators of wage rigidity as the dependent variable. The results are reported in Table 10. For comparison we run three different specifications according to the measure of wage rigidity used. The first specification corresponds to the survey question "Does your firm have a policy that adapts changes in base wages to inflation?". Firms that responded affirmatively ("yes") are counted as subject to downward wage rigidity. The second specification is based on the question "Have base wage ever been frozen in the last five years?", where a negative answer ("no") corresponds to wage rigidity. Finally, the last specification is based on the question "Has base wage ever been cut in the last five years?" and again a negative answer ("no") indicates wage rigidity. In all three cases a dummy variable was created, where value 1 indicates wage rigidity, and value 0 indicates no wage rigidity. Reported coefficients hence quantify the influence of a particular firm characteristic on the probability that a firm is subject to downward wage rigidity.

Regressions are run for Slovenia and as a benchmark also for the whole sample. The following regressors are included: share of permanent full-time employees, share of labour costs in total costs, share of bonuses in total wage bill, share of high skilled blue collar/technical workers, share of high skilled white collar/professional workers, type of collective pay agreement that applies to the company, subjective measure of competition (dummy indicating whether competition is severe or not), size of the firm measured by employment, and sector dummies. In addition, the regression on the whole sample also includes country dummies.

The results in Table 10 for the whole sample – columns (2), (4) and (6) – indicate that wage rigidity is influenced by different firm characteristics. Note that none of the three measures of wage rigidity is a perfect measure, they are derived from different survey questions and hence, in some cases, coefficients are of different signs across specifications. It could perhaps be argued that the first two specifications (adapting wages to inflation and whether wages have ever been frozen) are closer to measuring real wage rigidity, and the third one (whether wages have ever been cut) is closer to measuring nominal rigidity. However, when comparing the three specifications, the results do not seem to be any more similar between the first two specifications – columns (2) and (4) – as compared to the third specification – column (6).

If we focus on those characteristics that show consistent evidence across the three specifications and are significant in at least two cases with the same sign, then only share of labour costs in total cost (more labour intensive production) and the level of competition can be said to influence wage rigidity consistently. Both reduce the probability of being subject to wage rigidity<sup>9</sup>. There is also evidence that wage rigidity tends to be less prevalent in firms in the manufacturing sector. Coefficients of other regressors are either statistically not significant, or they change sign across specifications, so evidence in any direction is not robust.

The result that higher labour costs reduce wage rigidity is consistent with the theory of "reciprocity" by Matthew Rabin (1993) according to which people spend considerable resources to punish others for what they perceive as hostile acts. As discussed by Howitt (2002), one of the consequences of the reciprocity theory can be that wage cuts are less likely to occur if labour costs make up a smaller share of firms' total costs. This is because the direct increase in profit from the reduction in unit labour costs will be smaller relative to the damage that a disgruntled workforce can inflict on the firm's profit.

With respect to the effect of competition on wage rigidity, firms being subject to stronger competitive pressure may need more flexible wage setting practices, which would imply a negative relationship between competition and wage rigidity (Babecky et al., 2009).

Let us now turn to reported results for Slovenia, columns (1), (3) and (5). Recall from section 3.3 that only a very small minority of Slovenian firms have ever frozen or cut

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<sup>9</sup> The evidence on competition is consistent with Brzoza-Brzezina and Socha (2007), whereas evidence on share of labour cost is at odds with evidence from Du Caju et al. (2009). However, results are derived from very different data-sets and using different methodologies, thus they are not easily comparable.

wages, therefore the dummies on the left hand side for the second and third specification have a very imbalanced structure, where only a small number of 1's is observed. As expected, these two specifications result in almost all of the coefficients being statistically not significant. The first specification in column (1) returns a larger number of statistically significant coefficients, but due to a relatively small sample, standard errors are still considerably larger compared to the whole WDN sample. According to this specification, wage rigidity in Slovenia tends to be higher for firms with higher share of high skilled blue collar workers and for large firms, and tends to be lower for firms with an outside level of collective agreement, as compared to firms with a firm level agreement<sup>10</sup>. However, we are reluctant to draw conclusions based on one specification only.

Nevertheless, there is one robust and strong result that comes out of Table 10 and is also consistent with the analysis throughout the paper. In regressions on the whole sample we include country dummies and it can be seen that almost all country dummies are negative and highly statistically significant. Therefore this provides further evidence that Slovenia, after controlling for other firm characteristics, seems to have higher prevalence of downward wage rigidity compared to other countries. This result is robust across all three specifications and the dummies change signs across specifications only in two cases, France and the Netherlands.

We also ran regressions on the whole sample, where instead of country dummies we included two country level variables on the right hand side: the inflation rate and the GDP growth. The results are reported in Table 11<sup>11</sup>. This was done for two reasons. First, it was done as a robustness check of the results from regressions reported in Table 10. Indeed, almost all statistically significant coefficients on firm characteristics remained significant and kept the same sign (not reported), confirming the robustness. Second, a positive sign on the inflation rate and the GDP growth would assert the notion that in countries with higher inflation and higher growth, fewer wage cuts and wage freezes are observed. This would imply that one cannot distinguish between genuine wage rigidity and spurious wage rigidity, observed solely due to high inflation and growth. At the same

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<sup>10</sup> This result is puzzling and it could be explained using similar logic as in section 4.1 above. It is possible that the firms that are experiencing high growth adjust wages more rapidly in comparison to the prevailing inflation; hence they do not perceive inflation as being relevant for the wage determination. Alternatively, some respondents may have misinterpreted the question.

<sup>11</sup> Firm level characteristics are included in the regressions but not reported.

time, consistently positive coefficients of inflation rate would reinforce the belief that our interpretation of the measures of wage rigidity, that is whether an answer "yes" or "no" indicates the presence of wage rigidity", was correct.

According to specification 1 and specification 2 in Table 11 the inflation rate is consistently positive across all three specifications and statistically significant in four cases out of six. In contrast, the sign of the GDP growth is more erratic. However, it should be kept in mind, that these results should be interpreted with caution; the two variables basically act as country fixed effects, and thus are correlated with all other country level variables omitted from the regressions.

Finally, in specifications 3 and 4 we also include a country dummy for Slovenia. The coefficient on the Slovenian country dummy turns out positive and statistically significant in five cases out of six. The results thus suggest that after controlling for firm level characteristics and also for the GDP growth and inflation rate, wage rigidity still tends to be more prevalent in Slovenia compared to other countries. Higher wage rigidity in Slovenia cannot be fully explained by higher inflation and growth in the reference period.

## **5 Conclusion**

In this paper we analyze downward rigidity of wages for Slovenian firms. Our data is based on the survey of firms that was conducted within the framework of the Wage Dynamics Network (WDN), a research network sponsored by a consortium of Central Banks of the EU and coordinated by the European Central Bank (ECB).

Our results show that there is a strong presence of wage rigidity among Slovenian firms. Less than 5% of interviewed firms have ever cut or frozen wages in the last five years. Similarly, about one half of all firms apply some kind of policy of adapting wages to inflation. Wages on average appear to be more rigid in Slovenia compared to other European countries included in the survey. Slovenian firms are reluctant to cut wages because they fear that this would reduce the effort of employees in the company and that cutting wages may induce the best employees to leave the company. The results, however should be interpreted with caution; due to higher inflation and higher growth during the reference period in Slovenia, the wage rigidity could be overstated.

According to ideas in Tobin (1972) and Akerlof et al. (1996), evidence in favour of downward rigidity of wages in Slovenia indicates that it is important to preserve a small

but positive rate of inflation in order to facilitate adjustments in the labour market. Alternatively, of course, one can interpret the results also as evidence that shows that in Slovenia one should call for more flexibility in wages.

Nevertheless, not all authors interpret the macroeconomic consequences of downward wage rigidity in such a way. Some authors argue that evidence of downward rigidity of wages does not necessarily imply strong macroeconomic effects on unemployment and output. Elsby (2009) for example argues that downward wage rigidity can be consistent with weak macroeconomic effects. He argues that firms have an incentive to compress wage increases as well as wage cuts when downward wage rigidity binds, hence the costs of downward wage rigidity to firms are generally overstated. Therefore, downward wage rigidity may not provide a strong argument against the targeting of low, but positive, inflation rates.

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**Table 1: Macroeconomic Environment: 2002-2006**

	Slovenia			EU-25		
	inflation rate	GDP growth	unemployment rate (ILO)	inflation rate	GDP growth	unemployment rate (ILO)
2002	7.5	4.0	6.3	2.1	1.2	8.8
2003	5.7	2.8	6.7	2.0	1.3	9.0
2004	3.7	4.3	6.3	2.1	2.5	9.1
2005	2.5	4.5	6.6	2.2	2.0	9.0
2006	2.5	5.8	6.0	2.2	3.1	8.2
average	4.4	4.3	6.4	2.1	2.0	8.8

Source: EUROSTAT, in %.

**Table 2: Downward Wage Rigidity (I)**

	Has base wage ever been frozen in the last five years?*	Has base wage ever been cut in the last five years?*
Slovenia	3%	3%
Total	10%	4%
Euro area	13%	2%
Non-Euro area	9%	5%

\* % of firms that answered yes

**Table 3: Downward Wage Rigidity (II)**

	Policy that adapts changes in base wages to inflation?	Changes automatically linked to past inflation	Changes automatically linked to expected inflation	Changes take into account past inflation	Changes take into account expected inflation
Slovenia	<b>52%</b>	18%	1%	29%	5%
Total	<b>28%</b>	8%	2%	13%	5%
Euro area	<b>30%</b>	14%	5%	7%	5%
Non-Euro area	<b>27%</b>	6%	2%	15%	4%

**Table 4: Collective Pay Agreement**

	Firm applies collective pay agreement		
	Outside level		Firm level
	yes	applies some aspects but not all	yes
Slovenia	89%		11%
Total	21%	0.2%	10%
Euro area	87%	1%	22%
Non-Euro area	2%		6%

Note: Hungary is excluded here.



**Table 5: Performance Related Bonuses and Remuneration Principle**

	% of total wage bill performance related bonuses	Remuneration principle for main occupation group*			
		Hourly base wage	Piece-rate base wage	Monthly base wage	Other
Slovenia	21.1%	25%	2%	72%	2%
Total	11.1%	18%	8%	71%	2%
Euro area	10.9%	19%	0.3%	76%	5%
Non-Euro area	11.2%	18%	10%	70%	2%

\* Data for Belgium, Spain, France and Ireland not available.

**Table 6: Measures Ever Used by Firms to Reduce Labour Costs**

	Labour cost ever reduced by:							
	cutting bonuses	cutting non-pay benefits	changes in shift assignments	slowing / freezing promotions	new cheaper hires	use of early retirement & new cheap hires	other strategies	have not used any
Slovenia	9%	13%	6%	5%	9%	1%	4%	66%
Total	17%	11%	9%	11%	17%	3%	2%	59%
Euro area	16%	10%	9%	17%	32%	10%	9%	45%
Non-Euro area	18%	11%	9%	10%	15%	2%	1%	61%

\* Data for Austria, The Netherlands and Spain not available.

**Table 7: Reasons Why Firms Do Not Cut Wages**

Wages not cut ...									
	due to regulation or collective agreement			as would reduce effort & output/would impact employees' morale			as would damage firm's reputation as an employer for future hiring		
	0	1	2	0	1	2	0	1	2
Slovenia	25%	51%	23%	2%	42%	56%	5%	62%	33%
Total	56%	24%	20%	19%	51%	30%	24%	59%	18%
Euro area	13%	34%	52%	7%	47%	46%	21%	58%	21%
Non-Euro area	70%	21%	9%	23%	52%	26%	25%	59%	16%
Wages not cut ...									
	as best employees may leave			as quits would rise, raising hiring/training costs of new workers			as will not attract new workers		
	0	1	2	0	1	2	0	1	2
Slovenia	3%	41%	57%	8%	53%	39%	8%	65%	28%
Total	10%	39%	50%	18%	56%	26%	15%	60%	26%
Euro area	7%	46%	47%	11%	54%	35%	11%	68%	21%
Non-Euro area	12%	37%	51%	20%	57%	24%	16%	57%	27%
Wages not cut ...									
	due to implicit agreement between workers & firm for wage stability			as workers compare wages across firms					
	0	1	2	0	1	2			
Slovenia	6%	47%	47%	5%	54%	41%			
Total	20%	54%	26%	20%	60%	20%			
Euro area	23%	46%	31%	11%	61%	29%			
Non-Euro area	19%	56%	25%	22%	60%	18%			

0 – not relevant, 1 – relevant or of little relevance, 2 – very relevant

**Table 8: Factors Determining Entry Wage**

Most relevant factor determining entry wage					
	Collective agreement	Wages of similar employees inside firm	Wages of similar employees outside firm	Availability of similar workers	Other/none of the above
Slovenia	21%	63%	10%	6%	0%
Total	18%	52%	24%	38%	9%
Euro area	44%	30%	8%	14%	3%
Non-Euro area	10%	58%	29%	46%	10%

**Table 9: Reasons for Entry Wage Level**

Lower wage to new employees than existing if excess supply?						
	Yes	No, unfair	No, lowers effort/productivity	No, not allowed	No, due to unions	No, other
Slovenia	8%	22%	49%	17%	0.0%	4%
Total	14%	35%	41%	5%	1%	4%
Euro area (2)	11%	26%	28%	32%	2%	2%
Non-Euro area (6)	15%	35%	42%	3%	1%	5%

  

Higher wage to new employees than existing if shortage?						
	Yes	No, unfair	No, lowers effort/productivity	No, not allowed	No, due to unions	No, other
Slovenia	4%	32%	42%	12%	6%	5%
Total	5%	51%	30%	2%	10%	3%
Euro area (2)	18%	30%	32%	8%	13%	1%
Non-Euro area (6)	4%	52%	30%	1%	9%	3%

Note: This is based on data for Czech Republic, Estonia, Greece, Hungary, Italy, Lithuania, Poland and Slovenia only.

**Table 10: Downward Wage Rigidity and Firm Characteristics**

Dependent variable:	adapts wages to inflation		wage ever frozen		wage ever cut	
	Slovenia	Total Sample	Slovenia	Total Sample	Slovenia	Total Sample
	(1)	(2)	(3)	(4)	(5)	(6)
% of permanent full-time employees	0.001 (0.004)	0.002** (0.001)	0.006 (0.011)	-0.002 (0.002)	-0.003 (0.011)	0.000 (0.003)
% of labour costs in total costs	-0.001 (0.004)	-0.005*** (0.001)	-0.016 (0.01)	-0.004** (0.002)	-0.024** (0.01)	-0.008** (0.003)
% bonuses in wage bill	-0.002 (0.003)	-0.003** (0.001)	-0.001 (0.01)	0.003* (0.002)	-0.003 (0.01)	-0.004 (0.003)
% high skilled blue collar/technical	0.008* (0.004)	0.003*** (0.001)	-0.007 (0.011)	-0.002 (0.001)	0.004 (0.011)	-0.005** (0.002)
% high skilled white collar/professional	0.002 (0.004)	0.007*** (0.001)	-0.009 (0.010)	-0.006*** (0.002)	0.002 (0.012)	-0.004 (0.003)
Type of collective pay agreement (reference group: firm level)						
no agreement		-0.147 (0.109)		-0.182 (0.131)		0.211 (0.236)
outside level	-0.407* (0.222)	-0.175 (0.109)	0.736 (0.485)	0.256* (0.148)	0.305 (0.547)	-0.047 (0.274)
both		-0.029 (0.108)		0.083 (0.159)		0.149 (0.285)
severe competition	0.096 (0.171)	-0.116** (0.052)	-0.212 (0.459)	-0.369*** (0.078)	-0.049 (0.471)	-0.282** (0.119)
Firm size by employment (reference group: 5-19)						
20-49	0.206 (0.228)	0.002 (0.077)	0.73 (0.82)	-0.195* (0.113)	0.772 (0.708)	0.060 (0.179)
50-199	-0.198 (0.25)	0.137* (0.074)	0.224 (0.723)	-0.386*** (0.106)	0.610 (0.712)	-0.007 (0.174)
200+	0.553** (0.24)	0.540*** (0.084)	-0.155 (0.613)	-0.369*** (0.127)	0.695 (0.656)	0.192 (0.207)
Sector (reference group: financial intermediation)						
manufacturing	0.198 (0.428)	-0.443** (0.182)	0.431 (0.800)	-0.477* (0.247)	-18.591 (7249)	0.312 (0.396)
energy	0.432 (0.688)	-0.199 (0.298)	0.397 (1.355)	0.438 (0.642)	-19.018 (7249)	-0.344 (0.648)
construction	-0.062 (0.49)	-0.670*** (0.198)	0.786 (1.087)	-0.141 (0.269)	-17.747 (7249)	0.388 (0.449)
trade	0.181 (0.445)	-0.505*** (0.183)	1.17 (0.944)	-0.209 (0.250)	-17.975 (7249)	0.397 (0.402)
market services	0.257 (0.43)	-0.522*** (0.180)	1.214 (0.865)	-0.308 (0.243)	-16.683 (7249)	0.481 (0.392)
non-market services		-1.254*** (0.277)		-0.154 (0.378)		-0.104 (0.623)

**Table 10: Downward Wage Rigidity and Firm Characteristics (continued)**

	(1)	(2)	(3)	(4)	(5)	(6)
Country (reference group: Slovenia)						
Czech Republic		-0.133 (0.155)		-1.972*** (0.262)		-1.119*** (0.351)
Estonia		-0.189 (0.172)		-1.631*** (0.28)		-0.052 (0.459)
France		-1.069*** (0.108)		0.685** (0.285)		-1.126*** (0.263)
Greece		-0.511*** (0.176)		-0.798** (0.33)		
Hungary		-1.133*** (0.149)		-0.206 (0.267)		0.104 (0.381)
Ireland		-1.154*** (0.123)		-0.780*** (0.261)		0.588 (0.363)
Lithuania		-0.245 (0.167)		-1.525*** (0.277)		-0.941** (0.374)
Netherlands		-21.401 (1309.217)		-2.001*** (0.236)		0.811** (0.378)
Poland		-1.162*** (0.149)		-0.834*** (0.269)		-0.585* (0.353)
Portugal		-0.395*** (0.126)		-1.400*** (0.259)		1.455*** (0.417)
Observations	665	8340	659	8117	662	7959
Pseudo R-squared	0.053	0.216	0.077	0.133	0.090	0.088

Coefficients from logistic regressions reported with standard errors in parentheses. \* Statistically significant at 10%, \*\* statistically significant at 5%, \*\*\* statistically significant at 1%. All regressions include a constant.

**Table 11: Downward Wage Rigidity – Effects of Macroeconomic Variables**

Dependent variable:	adapts wages to inflation	wage ever frozen	wage ever cut
	(1)	(2)	(3)
Specification 1			
GDP growth (2006)	0.158** (0.066)	-0.088 (0.089)	-0.101 (0.088)
HICP inflation (2006)	0.326** (0.153)	0.112 (0.204)	0.364** (0.150)
Specification 2			
GDP growth (average 2002-2006)	0.207** (0.096)	0.011 (0.085)	-0.087 (0.080)
HICP inflation (average 2002-2006)	0.133 (0.120)	0.320** (0.128)	0.440*** (0.147)
Specification 3			
Slovenia dummy	0.965*** (0.251)	1.344*** (0.285)	0.525* (0.306)
GDP growth (2006)	0.119** (0.056)	-0.115 (0.080)	-0.124 (0.081)
HICP inflation (2006)	0.308** (0.150)	0.100 (0.196)	0.350** (0.146)
Specification 4			
Slovenia dummy	1.018*** (0.184)	0.554** (0.236)	-0.569 (0.482)
GDP growth (average 2002-2006)	0.177** (0.090)	0.002 (0.084)	-0.074 (0.079)
HICP inflation (average 2002-2006)	0.017 (0.092)	0.286** (0.132)	0.511** (0.210)

Coefficients from logistic regressions reported. Robust standard errors in parentheses (clustered by country). \* Statistically significant at 10%, \*\* statistically significant at 5%, \*\*\* statistically significant at 1%. All regressions include firm level characteristics as in Table 10 and a constant (not reported).

# Appendix

## Questionnaire

The Bank of Slovenia is administering this survey as part of the Wage Dynamics Network project organized by the European Central Bank.

Data on individual survey responses and companies will be highly confidential and dealt with in a manner consistent with confidentiality legislation. The data will be accessible exclusively to authorized individuals at the Bank of Slovenia. The survey data will be made available to other authorized users within the ESCB in an anonymous format that will not enable identification of companies and/or respondents. The information collected through the questionnaire will be used exclusively for ESCB research purposes. Survey results published by the ECB will contain only aggregate figures that will not allow for responses to individual questions or sets of questions to be identified.

We request that you fill out the survey by 31. January 2008.

Thank you for your cooperation!

### **Instructions for filling out the questionnaire:**

- 1.** Reference period: the period covered by your 2006 “profit and loss account”.
- 2.** Main occupational group: The largest occupational group based on the categories in question 1.1
- 3.** If exact numbers are difficult for you to find please use approximate answers.
- 4.** Who should fill out the questionnaire? A member of the board or the CEO.

## Information about the firm and respondent

Firm identification number:

\_\_\_\_\_

Name and surname of respondent:

\_\_\_\_\_

Position in the firm:

\_\_\_\_\_

E-mail address for possible questions regarding survey responses:

\_\_\_\_\_

**How many employees did your firm have at the end of the reference period?**

Permanent full-time employees	_____
Permanent part-time employees	_____
Fixed-term employees	_____
Employees - TOTAL	_____

**How many individuals were employed by your firm via student employment agencies?**

**How many individuals were employed by your firm via other contracts (e.g. via employment agencies, freelance workers, etc.)?**

**How many employees (including fixed-term employees) left the firm during the reference period (2006)?**

**How many employees (including fixed-term employees) joined the firm during the reference period (2006)?**

**Approximately how were your firm's employees distributed across the following age classes at the end of 2006?**

*Figures must sum to 100%*

Less than 25 years old	_____ %
25-54 years old	_____ %
55-65 years old	_____ %
More than 65 years old	_____ %

**How were your firm's permanent employees distributed according to tenure at the end of 2006?**

*Figures must sum to 100%*

Less than 1 year	_____ %
1 to 5 years	_____ %



More than 5 years \_\_\_\_\_%

**What percentage of your firm's total costs were due to labour costs in 2006?**

*Definitions: Total costs - all operating expenses. Labour costs: wages, bonuses, social contributions, social contributions, training, tax contributions, contributions to pension funds, and other expenses related to labour.*

\_\_\_\_\_ %

**How was your firm's revenue in the reference period (2006) compared to the previous year?**

\_\_\_\_\_ Significantly lower [-15% or more]

\_\_\_\_\_ Lower [from -2% to -15%]

\_\_\_\_\_ About the same [from -2% to +2%]

\_\_\_\_\_ Higher [from +2% to +15%]

\_\_\_\_\_ Significantly higher [more than +15%]

**Which form of sales generated the most revenue for your firm during the reference period?**

*Please choose the most relevant option.*

\_\_\_\_\_ Retail sales

\_\_\_\_\_ Wholesale sales

\_\_\_\_\_ Sales to other business units within the parent company

\_\_\_\_\_ Sales to other firms

\_\_\_\_\_ Sales to government entities (state, municipal, ...)

\_\_\_\_\_ Direct sales

\_\_\_\_\_ Other sales (please specify) \_\_\_\_\_

**What was the domestic market share of your main product?**

\_\_\_\_\_ Less than 5%

\_\_\_\_\_ 5% -20%

\_\_\_\_\_ 20% -50%

\_\_\_\_\_ More than 50%, less than 100%

\_\_\_\_\_ 100%

\_\_\_\_\_ Don't know / Don't wish to answer

## **1. Wage setting and wage changes**

**1.1 Approximately how were your firm's employees distributed across the following occupational groups in the reference period (2006)?**

*General definition of employees: individuals with a definite or fixed-term employment contract. See the attached appendix for a more detailed explanation of employees and occupational groups.*

High skilled white collar/Professional	_____ %
High skilled blue collar/Technical	_____ %
Low skilled white collars/Clerical	_____ %
Low skilled blue collars/Production	_____ %

*The main occupational group in your firm is the most common group of employees in question 1.1.*

**1.2 Which collective bargaining agreement does your firm apply in determining the wages of the main occupational group?**

\_\_\_\_\_ Firm-level collective bargaining agreement  
 \_\_\_\_\_ Sector-level collective bargaining agreement  
 \_\_\_\_\_ General collective bargaining agreement  
 \_\_\_\_\_ Do not know  
 \_\_\_\_\_ Other (please specify) \_\_\_\_\_

**1.3 Approximately what share of your employees have base wages that deviate from the minimum specified in the relevant collective bargaining agreement?**

*For every occupational group, specify a number from 0% to 100%..  
 Definition of base wage: regular gross wage without bonuses.*

High skilled white collar/Professional	_____ %
High skilled blue collar/Technical	_____ %
Low skilled white collars/Clerical	_____ %
Low skilled blue collars/Production	_____ %

**1.4 What are the actual base wages of your employees relative to the minimum base wages specified in the in the relevant collective bargaining agreement?**

*Definition of base wage: regular gross wage without bonuses.*

<i>Actual base wages are exactly as specified in the collective bargaining agreement</i>	<i>Actual base wages are higher than those specified in the collective bargaining agreement for at least some workers</i>	<i>Actual base wages are lower than those specified in the collective bargaining agreement for at least some workers</i>	<i>Actual base wages tend to be both lower and higher than those specified in the collective bargaining agreement</i>	<i>Do not know</i>
--	---	--	---	--------------------

<i>High skilled white collar/Professional</i>	_____	_____	_____	_____	_____
<i>High skilled blue collar/Technical</i>	_____	_____	_____	_____	_____
<i>Low skilled white collars/Clerical</i>	_____	_____	_____	_____	_____
<i>Low skilled blue collars/Production</i>	_____	_____	_____	_____	_____

**1.5 – Approximately what percentage of your total wage bill in the reference period comprised of variable pay (e.g. bonuses), related to:**

- individual performance? \_\_\_\_\_ %
- company performance? \_\_\_\_\_ %

**1.6 Does your firm have a policy that adapts changes in base wages to inflation?**

*Definition of base wage: regular gross wage without bonuses.*

- \_\_\_\_\_ Yes, wage changes are automatically linked to past inflation
- \_\_\_\_\_ Yes, wage changes are automatically linked to expected inflation
- \_\_\_\_\_ Yes, wage changes take into account, without a formal rule, past inflation
- \_\_\_\_\_ Yes, wage changes take into account, without a formal rule, expected inflation
- \_\_\_\_\_ No

**1.7 What is the principle of remuneration for the main occupational group?**

*Please choose the most relevant option.  
See the attached appendix for a more detailed explanation.*

- \_\_\_\_\_ Hourly base wage
- \_\_\_\_\_ Piece-rate base wage
- \_\_\_\_\_ Monthly base wage
- \_\_\_\_\_ Other (please specify) \_\_\_\_\_

**1.8 How frequently is the base wage of the main occupational group in your firm (as defined in question 1.1) typically changed in your firm?**

- more than once a*
- once a year*
- once every two*
- less frequently than once every*
- never*

	<i>year</i>		<i>years</i>	<i>two years</i>	
<i>Wage changes due to inflation</i>	_____	_____	_____	_____	_____
<i>Wage changes due to tenure</i>	_____	_____	_____	_____	_____
<i>Wage changes apart from tenure and inflation</i>	_____	_____	_____	_____	_____

**1.9 Under normal circumstances, are base wage changes concentrated in any particular month / months?**

*Please choose all relevant options.*

- January
- February
- March
- April
- May
- June
- July
- August
- September
- October
- November
- December
- No, base wage changes are not concentrated in any particular month/months.

**1.10 What is the most relevant factor in determining the entry wage of newly hired employees?**

*The question refers to the main occupational group in your firm, as identified in question 1.1. Please choose the most relevant option.*

- Collective wage agreement (at any level)
- Wage of similarly educated and experienced employees in the firm
- Wage of similarly educated and experienced workers outside the firm
- Availability of similar workers in the labour market
- Other reasons (please specify) \_\_\_\_\_

**1.11 If there is abundance in the labour market of workers you need to hire, do you pay newly hired employees significantly lower wage than that of similar (in terms of experience and qualification) employees already in the firm?**

*The question refers to the main occupational group in your firm, as identified in question 1.1. Please choose the most relevant option.*

- Yes
- No, because it would be perceived as unfair and earn the firm bad reputation
- No, because it would have a negative effect on the work effort of the new employees
- No, because it is not allowed by labour regulation or collective pay agreement

- \_\_\_\_\_ No, because unions would contest such action
- \_\_\_\_\_ No - other reasons (please specify) \_\_\_\_\_

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

*The question refers to the main occupational group in your firm, as identified in question 1.1. Please choose the most relevant option.*

- \_\_\_\_\_ Yes
- \_\_\_\_\_ No, because it would be perceived as unfair by existing employees
- \_\_\_\_\_ No, because it would have a negative effect on work effort of the employees in the firm
- \_\_\_\_\_ No, because it is not allowed by labour regulation or collective pay agreement
- \_\_\_\_\_ No, because it would generate pressure for wage increases by existing employees
- \_\_\_\_\_ No - other reasons (please specify) \_\_\_\_\_

## **2. Downward wage rigidity and adjustment to shocks**

**2.1 Over the last five years, has the base wage of some employees in your firm ever been frozen?**

*Definition of freeze in base wage - base wage in nominal terms remains unchanged at a time when it typically would have been changed.*

- \_\_\_\_\_ No
- \_\_\_\_\_ Yes (please indicate for what percentage of your employees) \_\_\_\_\_

**2.2 Over the last five years, has the base wage of some employees in your firm ever been cut?**

*Definition of cut in base wage - base wage decreases in nominal terms.*

- \_\_\_\_\_ No
- \_\_\_\_\_ Yes (please indicate for what percentage of your employees) \_\_\_\_\_

**2. If you answered “yes” in either question 2.1 or 2.2, what was the main reason for freezing/reducing the base wage?**

*Please choose the most relevant option.*

- \_\_\_\_\_ Profitability and/or sales went down
- \_\_\_\_\_ Other costs increased
- \_\_\_\_\_ Jobs were at risk
- \_\_\_\_\_ It was imposed by legislation or a higher level collective agreement
- \_\_\_\_\_ Because worker performance was not satisfactory
- \_\_\_\_\_ Other reasons (please specify) \_\_\_\_\_

**2.4 How relevant is each one of the following reasons in preventing base wage cuts?**

Please choose one option in each line.

	<i>Not relevant</i>	<i>Of little relevance</i>	<i>Relevant</i>	<i>Very relevant</i>	<i>Don't know</i>
<i>Labour regulation/collective agreements prevent wages from being cut</i>	_____	_____	_____	_____	_____
<i>It would reduce employees' efforts, resulting in less output or poorer service</i>	_____	_____	_____	_____	_____
<i>It would have a negative impact on employees' morale</i>	_____	_____	_____	_____	_____
<i>It would damage the firm's reputation as an employer, making it more difficult to hire workers in the future</i>	_____	_____	_____	_____	_____
<i>In presence of a wage cut the most productive employees might leave the firm</i>	_____	_____	_____	_____	_____
<i>A wage cut would increase the number of employees who quit, increasing the cost of hiring and training new workers</i>	_____	_____	_____	_____	_____
<i>It would create difficulties in attracting new workers</i>	_____	_____	_____	_____	_____
<i>Workers dislike unpredictable reductions in income.</i>	_____	_____	_____	_____	_____
<i>Employees compare their wage to that of similarly qualified workers in other firms in the same market</i>	_____	_____	_____	_____	_____

**2.5 Has any of the following strategies ever been used in your firm to reduce labour costs?**

Please choose as many options as apply to your firm.

- \_\_\_\_\_ Reduction or elimination of bonus payments
- \_\_\_\_\_ Reduction or elimination of non-pay benefits
- \_\_\_\_\_ Change in shift assignments
- \_\_\_\_\_ Slowdown or freeze of the rate at which promotions are filled
- \_\_\_\_\_ Recruitment of new employees (with similar skills and experience) at lower wage than those who left (e.g. due to voluntary quits and retirement)
- \_\_\_\_\_ Use of early retirement to replace high wage employees by entrants with lower wages
- \_\_\_\_\_ Don't know
- \_\_\_\_\_ Other strategies (please specify)\_\_\_\_\_

**2.6 Has it become easier over the last decade to adjust wages to reduce labour costs?**

- \_\_\_\_\_ Yes
- \_\_\_\_\_ No
- \_\_\_\_\_ Don't know

**2.7 If “yes”, why?**

*Please choose a single option, the most important reason.*

- \_\_\_\_\_ Competition has become more intense
- \_\_\_\_\_ More workers are available on the market
- \_\_\_\_\_ Trade unions have less power in collective bargaining
- \_\_\_\_\_ Employment protection has become less tight
- \_\_\_\_\_ Production is outsourced in markets where labour is cheaper
- \_\_\_\_\_ Price inflation and inflation expectations are lower and more stable



**The next six questions investigate how your firm adjusts wages, prices, total costs, employment and margins to shocks.**

In answering, for prices please refer to the "main product or service", defined as the one that generated the highest fraction of turnover in the "reference year", and for employment and wages please refer to the main occupational group in your firm (as identified in question 1.1).

**2.8 How relevant are each one of the following strategies when your firm faces an unanticipated slowdown in demand?**

*Please choose one option in each line.*

	<i>Not relevant</i>	<i>Of little relevance</i>	<i>Relevant</i>	<i>Very relevant</i>	<i>Don't know</i>
<i>Reduce prices</i>	_____	_____	_____	_____	_____
<i>Reduce margins</i>	_____	_____	_____	_____	_____
<i>Reduce output</i>	_____	_____	_____	_____	_____
<i>Reduce costs</i>	_____	_____	_____	_____	_____

**2.9 If the reduction of costs is of any relevance in your answer to question 2.8, please indicate the main channel through which this goal is achieved:**

*Please choose a single option, the most important factor.*

- \_\_\_\_\_ Reduce base wages
- \_\_\_\_\_ Reduce flexible wage components (for example bonuses, benefits, etc )
- \_\_\_\_\_ Reduce the number of permanent employees
- \_\_\_\_\_ Reduce the number of temporary employees / other type of workers
- \_\_\_\_\_ Adjust the number of hours worked per employee
- \_\_\_\_\_ Reduce other non-labour costs

**2.10 How relevant are each one of the following strategies when your firm faces an unanticipated increase in the cost of an intermediate input (e.g. an oil price increase) affecting all firms in the market?**

*Please choose one option in each line.*

	<i>Not relevant</i>	<i>Of little relevance</i>	<i>Relevant</i>	<i>Very relevant</i>	<i>Don't know</i>
<i>Increase prices</i>	_____	_____	_____	_____	_____
<i>Reduce margins</i>	_____	_____	_____	_____	_____
<i>Reduce output</i>	_____	_____	_____	_____	_____
<i>Reduce costs</i>	_____	_____	_____	_____	_____

**2.11 If the reduction of other costs is of any relevance in your answer to question 2.10, please indicate the main channel through which this goal is achieved:**

*Please choose a single option, the most important factor.*

- \_\_\_\_\_ Reduce base wages
- \_\_\_\_\_ Reduce flexible wage components (for example bonuses, benefits, etc )
- \_\_\_\_\_ Reduce the number of permanent employees

- \_\_\_\_\_ Reduce the number of temporary employees / other type of workers
- \_\_\_\_\_ Adjust the number of hours worked per employee
- \_\_\_\_\_ Reduce non-labour costs

**2.12 How relevant are each one of the following strategies when your firm faces an unanticipated permanent increase in wages (e.g. due to the renewal of the national contract) affecting all firms in the market?**

*Please choose one option in each line.*

	<i>Not relevant</i>	<i>Of little relevance</i>	<i>Relevant</i>	<i>Very relevant</i>	<i>Don't know</i>
<i>Increase prices</i>	_____	_____	_____	_____	_____
<i>Reduce margins</i>	_____	_____	_____	_____	_____
<i>Reduce output</i>	_____	_____	_____	_____	_____
<i>Reduce costs</i>	_____	_____	_____	_____	_____

**2.13 If the reduction of other costs is of any relevance in your answer to question 2.12, please indicate the main channel through which this goal is achieved:**

*Please choose a single option, the most important factor.*

- \_\_\_\_\_ Reduce flexible wage components (for example bonuses, benefits, etc )
- \_\_\_\_\_ Reduce the number of permanent employees
- \_\_\_\_\_ Reduce the number of temporary employees / other type of workers
- \_\_\_\_\_ Adjust the number of hours worked per employee
- \_\_\_\_\_ Reduce non-labour costs

### **3. Price setting and price changes**

*Main product: the product which generated the highest fraction of your firm's revenue in the reference period.*

**3.1 Approximately what share of the revenue generated by your firm's main product in the reference period was due to sales in:**

*In 2006, the European Union encompassed the following countries in addition to Slovenia: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Hungary, Malta, Germany, Netherlands, Poland, Portugal, Slovakia, Spain, Sweden, Great Britain.*

*TOTAL = 100%*

Domestic market (Slovenia)	_____ %
Foreign markets - European Union	_____ %
Foreign markets - former Yugoslavia excluding Slovenia	_____ %
Foreign markets - rest of world	_____ %

**3.2 How is the price of your firm's main product set in its main market?**

*Please choose the most relevant option.*

- \_\_\_\_\_ There is no autonomous price setting policy because the price is regulated
- \_\_\_\_\_ There is no autonomous price setting policy because the price is set by a parent company/group
- \_\_\_\_\_ There is no autonomous price setting policy because the price is set by the main customer(s)
- \_\_\_\_\_ The price is set following the main competitors
- \_\_\_\_\_ The price is set fully according to costs and a completely self-determined profit margin
- \_\_\_\_\_ Other (please specify) \_\_\_\_\_

**3.3 To what extent does your firm experience price competition for its main product?**

*Please choose the most relevant option.*

- \_\_\_\_\_ Severe competition
- \_\_\_\_\_ Strong competition
- \_\_\_\_\_ Weak competition
- \_\_\_\_\_ No competition
- \_\_\_\_\_ Don't know / no answer

**3.4 Suppose that the main competitor for your firm's main product decreases its prices; how likely is your firm to react by decreasing its own price?**

*Please choose the most relevant option.*

- \_\_\_\_\_ Very likely
- \_\_\_\_\_ Likely
- \_\_\_\_\_ Not likely
- \_\_\_\_\_ Not at all
- \_\_\_\_\_ It doesn't apply

**3.5 How often was the price of the firm's main product typically changed:**

*Please choose the most relevant option for each year.*

	<i>Daily</i>	<i>Weekly</i>	<i>Monthly</i>	<i>Quarterly</i>	<i>Half-yearly</i>	<i>Once a year</i>	<i>Once every two years</i>	<i>Less frequently than once every two years</i>	<i>Never</i>	<i>There is not a defined pattern</i>
<i>in 2006</i>	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
<i>In 2007</i>	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

**3.6 Under normal circumstances, are these price changes concentrated in any particular month / months?**

*Please choose all relevant options.*

- January
- February
- March
- April
- May
- June
- July
- August
- September
- October
- November
- December
- No, price changes are not concentrated in any particular month/months.

**3.7 How does the timing of these price changes relate to that of wage changes?**

*Please choose the most relevant option.*

- There is no link between the two
- There is a link but no particular pattern
- Decisions are taken simultaneously
- Price changes tend to follow wage changes
- Wage changes tend to follow price changes
- Don't know

**3.8 How important were the following factors in determining changes in the price of your main product during the reference period (2006)?**

	<i>Not relevant</i>	<i>Of little relevance</i>	<i>Relevant</i>	<i>Very relevant</i>	<i>Don't know</i>
<i>Changes in the price of inputs</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Changes in labour costs (including taxes on labour)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Changes in demand</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Changes in competitors' prices</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Changes in financing costs</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Changes in direct taxes on your product (e.g. VAT, excise taxes) \_\_\_\_\_

Exchange rate fluctuations \_\_\_\_\_

**3.9 When the price of your main product was increased, how large was the average increase:**

	<i>The price was never increased during this period</i>	<i>Less than 1%</i>	<i>1%-5%</i>	<i>5%-10%</i>	<i>10%-20%</i>	<i>20%-50%</i>	<i>50%-100%</i>	<i>Over 100%</i>	<i>Don't know / no answer</i>
<i>in 2006</i>	_____	_____	_____	_____	_____	_____	_____	_____	_____
<i>in 2007</i>	_____	_____	_____	_____	_____	_____	_____	_____	_____

**3.10 When the price of your main product was decreased, how large was the average decrease:**

	<i>The price was never decreased during this period</i>	<i>Less than 1%</i>	<i>1%-5%</i>	<i>5%-10%</i>	<i>10%-20%</i>	<i>20%-50%</i>	<i>50%-100%</i>	<i>Over 100%</i>	<i>Don't know / no answer</i>
<i>in 2006</i>	_____	_____	_____	_____	_____	_____	_____	_____	_____
<i>in 2007</i>	_____	_____	_____	_____	_____	_____	_____	_____	_____

**3.11 When the price of your main product was changed:**

	<i>It always increased</i>	<i>It usually increased but sometimes decreased</i>	<i>It increased and decreased with approximately equal frequency</i>	<i>It usually decreased but sometimes increased</i>	<i>It always decreased</i>	<i>The price never changed during this period</i>
<i>in 2006</i>	_____	_____	_____	_____	_____	_____
<i>in 2007</i>	_____	_____	_____	_____	_____	_____

**3.12 Do you feel that the competitors for your firm's main product/service decided to implement extraordinary price changes in the last months of 2006 because of preparations related to the adoption of the euro?**

\_\_\_\_\_ Yes, prices were increased somewhat because of the introduction of the euro

\_\_\_\_\_ Yes, prices were decreased somewhat because of the introduction of the euro

\_\_\_\_\_ No, price adjustments which would have taken place in the last months of 2006 were postponed to 2007

\_\_\_\_\_ No, there were no extraordinary price changes related to preparations for euro adoption

\_\_\_\_\_ Don't know / no answer / don't have any competitors

**3.13 Do you feel that the competitors for your firm's main product/service decided to implement extraordinary price changes in the first months of 2007 as a result of the adoption of the euro?**

- \_\_\_\_\_ Yes, prices were increased somewhat because of the introduction of the euro
- \_\_\_\_\_ Yes, prices were decreased somewhat because of the introduction of the euro
- \_\_\_\_\_ No, price adjustments which would have taken place in the first months of 2007 were postponed
- \_\_\_\_\_ No, there were no extraordinary price changes related to preparations for euro adoption
- \_\_\_\_\_ Don't know / no answer / don't have any competitors

## Appendix

**EMPLOYEES:** Workers with a contract of employment (paid employees who work on-site; paid employees who work off-site such as customer service representatives or telecommuters; salesmen and similar employees; seasonal workers with a contract of employment). **Exclude** students working via a student employment agency, interns, freelance workers, and casual workers who do not have a contract of employment.

### OCCUPATIONAL GROUPS:

Occupational group		Major occupational group based on the ISCO-88 standard	Educational levels typically associated with occupational groups
High skilled white collar/ Professional	1	Senior officials and managers	no defined standards
	2	Professionals	4-year university or graduate degree
High skilled blue collar/ Technical	3	Technicians and associate professionals	2-year post-secondary school degree
Low skilled white collar/ clerical	4	Clerks	Secondary/high school degree*
Low skilled blue collars/ Production	5	Service workers and shop and market sales workers	Secondary/high school degree*
	6	Agricultural and fishery workers	Secondary/high school degree*
	7	Craft and related trade workers	Secondary/high school degree*
	8	Plant and machine operators and assemblers	Secondary/high school degree*
	9	Elementary occupations	Primary education
	0	Armed forces	no defined standards

\* Note: Includes vocational, technical, professional and general secondary school programs.

### PRINCIPLES OF REMUNERATION:

**Hourly base wage:** pay is calculated based on a per-hour basis, although it can be paid out on a monthly (or other) basis.

**Piece-rate base wage:** pay is directly determined by the volume of pieces produced or sold (e.g. commission-based pay).

**Monthly base wage:** pay is set at a monthly rate (or other time period), although it can be modified to take into account the number of weekdays per month (or relevant time period).