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Features of the Labour Market and Wage Setting in Croatia: Firms Survey Results

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Abstract

Data collected during the conduct of the survey on the labour market and wage setting in Croatia, which was conducted during the second half of 2014, within the European Central Bank's Wage Dynamics Network (WDN) project, show that the illiquidity shock, the demand shock and unfavourable financing conditions were the most widespread economic shocks to which firms were exposed from 2010 to 2013. Firms adjusted to unfavourable economic conditions by reducing total costs, primarily labour costs. The dominant cost-cutting strategy was to reduce the number of employed persons, i.e., through individual layoffs, but also through the non-renewal of fixed-term contracts at expiration and a freeze on and reduction of new hires. In the first years of the crisis relatively few firms in Croatia resorted to nominal wage cuts in their efforts to adjust to the adverse economic shock. However, this share grew year-on-year, as did the percentage of workers affected by wage cuts. Although this information would tend to indicate a reduction of wage rigidity in Croatia, other indicators suggest that, despite this, wage setting in Croatia cannot be considered flexible. Thus a significant number of firms change wages less frequently than once a year, one third of firms index wages in relation to inflation, and collective pay agreements regulate wages for about a half of the employees in the private sector.

Keywords:
labour cost, employment, wage rigidity, collective bargaining, survey data

JEL:
J30, J31, J32, J33, J38, J51

Contents

1 Introduction

In the second half of 2014, the Croatian National Bank (HNB) conducted a firm survey on the features of the labour market and wage setting. The survey was conducted within the European Central Bank's Wage Dynamics Network (WDN) and Croatia was participating for the first time. The WDN is a research network consisting of economists from the European Central Bank (ECB) and the national central banks (NCBs) of the EU countries. The WDN aims at studying the main features of wage formation processes and other labour costs determinants, with particular emphasis on the impact of labour cost dynamics on monetary policy. An additional goal of WDN is to investigate the relationship between wages, labour costs and prices at both firm and macro-economic level.

As labour costs are an important component of the total costs of a firm, their timely adjustment to fluctuations in economic activity is a key to the successful performance and competitiveness of any firm. High total labour costs in the economy may harm a country's competitiveness, which is particularly evident in small open economies in which the ability to conduct an active exchange rate policy is limited by the high degree of euroisation.

The first round of firm surveying within the WDN was carried out in the second half of 2007 and in the first half of 2008. The main objectives of the survey were to examine the phenomenon of real and nominal wage rigidity downwards, examine the frequency of wage and price fluctuations and the possible existence of a link between wage and price setting in firms, analyse alternative strategies for reducing labour costs, analyse wage setting of the newly employed and the adjustment of firms to hypothetical shocks. Because of the beginning of the economic crisis by the end of 2008, an additional survey was conducted within the WDN in mid-2009 to examine how firms were adjusting to the new business environment due to the financial crisis and a sharp decline in economic activity, and whether the phenomenon of wage rigidity downwards was still valid during the economic turmoil in 2009.

In early 2014, a decision was taken to conduct a survey on wage setting in firms within the WDN research network for the third time to collect detailed information on the changes in the economic environment (change in demand, access to external financing, customers' ability to pay, etc.) and their impact on firms' activity and to analyse the methods of labour cost adjustment in the 2010 – 2013 period. A specific objective of the third wave of the survey was also to give a deeper insight into the concrete determinants of labour legislation that had a direct impact on the firms' labour costs. This enabled assessment of effective labour market flexibility, as perceived by employers in countries that have implemented labour law reforms, and the collection of information on the optimal direction of further reforms that would facilitate future adjustments to economic fluctuations for firms. Firms' evaluation of the most important obstacles to the hiring of workers with permanent contracts (e.g. uncertainty about economic conditions, hiring and firing costs, high payroll taxes, difficult access to financing, etc.) is very important for economic policy makers.

In the period from September to November 2014 and in accordance with the conduct of the survey in other EU countries, the HNB conducted a survey on the labour market and wage setting in Croatia on a sample of firms with five or more employees in the manufacturing, construction, trade and business services sectors. The survey questionnaire was prepared within the

WDN and it was harmonised among the EU countries. The survey was complex and contained a total of 35 questions[1]. The survey was carried out by the market research agency Ipsos Puls. The gross sample consisted of 4548 firms, 648 in construction, 1361 in manufacturing, 1365 in the trade sector and 1174 in the segment of business services. The final gross sample of the firms was a two-stage stratified sample, i.e., broken down by activity and by size. The survey was carried out by a combined online and telephone survey. A total of 301 firms responded to the survey, the response rate thus being 7%.

Since Croatia did not participate in the first or second wave of the firms survey within the WDN, all data collected in the third wave of the survey are presented in detail in this paper. The remaining part of the paper is organised as follows. The development of economic activity, employment and wages in Croatia from the beginning of the crisis is shown in the second chapter. The third chapter investigates, on the basis of the firm survey results, the impact of different factors in the economic environment (such as change in customers' ability to pay, change in the level and volatility of demand and access to external financing) on firms' activity. A comparison of effective economic developments with the developments as perceived by the survey participants is accordingly made possible. In addition, this chapter analyses the movement of total costs of the surveyed firms in Croatia, which cost components firms have adjusted during the crisis, and examines the distribution of the use of various strategies used to adjust labour costs (adjustment of wages, labour input, working hours, etc.). The fourth chapter examines the most frequently used strategies to reduce labour input (such as non-renewal of fixed-term contracts, freeze of new hires, early retirement and temporary and collective layoffs). In addition, this chapter also analyses the impact of labour market reforms on facilitating labour force adjustments and investigates the main obstacles which firms face in hiring workers with permanent contracts. The fifth chapter investigates the coverage of collective pay agreements, the indicators of nominal and real wage rigidity and the rigidity of wages of newly hired workers and analyses the demonstrative effect of wage cuts in the public sector. The sixth chapter examines the existence of synchronisation between decisions on wage and price changes. The seventh chapter presents the main conclusions of the survey.

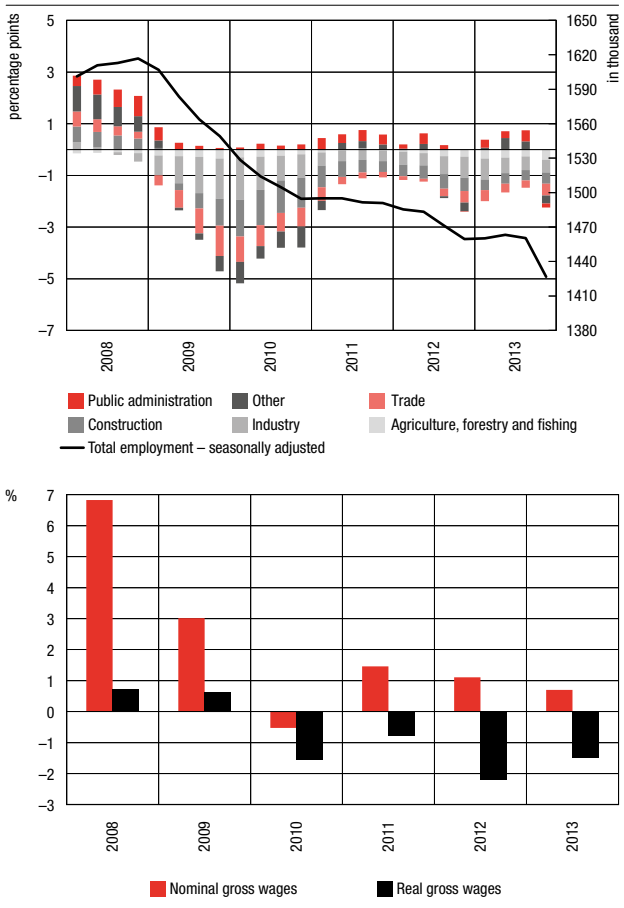
2 Economic activity, employment and wages in Croatia from the beginning of the crisis

In the period from 2010 to 2013, developments in the labour market in Croatia were under the influence of a prolonged economic crisis. There was a sharp fall in GDP in 2009 (–7.4%) that was continued in the following years, so that at the end of 2013, the cumulative decline in GDP stood at 12%. Extremely negative trends were recorded in construction, manufacturing and trade, transport, accommodation and food service activities, which recorded a decline in gross added value of 41%, 19% and 16%, respectively, while stagnant developments in gross added value were recorded in service activities. In the past five years, economic developments in Croatia were very unfavourable when compared with other EU countries since Croatia, along with Greece, was the only country that had not recorded a single year of growth in economic activity from the beginning of the crisis in 2009 until the time when the survey was conducted. Also, the cumulative decrease in GDP in Croatia was the second strongest among EU countries, after Greece.

Such trends resulted in a significant worsening of all labour market indicators. The number of employed persons fell by over 10% in the period from the beginning of the crisis to 2013. The reduction in the number of employed persons was particularly evident in the private sector (–14%), i.e., in construction (–34%), manufacturing (–18%) and trade (–15%). The number of employed persons stagnated in tourism and other services. Matching the sharp decline in the number of employed persons, the number of unemployed persons increased, and the unemployment rate doubled from an average of 8.5% in 2008 to 17.3% in 2013.

1 The questionnaire is attached in Appendix B.

Figure 1 Labour input trends and developments in nominal and real wages, 2008 – 2013



Note: Figure 1 shows total employment and contributions to the year-on-year change in employment by sector.
Sources: CPII and CBS.

Despite a sharp decline in the number of employed persons, as regard labour prices, nominal gross wages continued to rise during the crisis, with the exception of 2010. However, when compared with the pre-crisis average growth in wages of over 6% annually, the dynamics of the growth in nominal gross wages slowed down significantly. On the other hand, real gross wages decreased constantly, starting from 2010, and were down by 6% in 2013, relative to the pre-crisis period.

During the reference period to which this questionnaire refers, but also during the period of the actual administration of the questionnaire (the second half of 2014) the end of recession in Croatia was not even near, so that the uncertainty about future developments was very high. For this reason, the questionnaire contains a separate section with questions dedicated to the changes in the economic environment, which enables a direct evaluation of the effects of the crisis on the performance of each firm, the results of which are analysed below.

3 Effect of changes in the economic environment on firms' activity and the labour market

As the survey on the labour market and wage setting was carried out for the period from 2010 to 2013, which for Croatia represents a period of prolonged economic crisis, a proper interpretation of the results obtained is not possible without the quantification of the main changes in the economic environment and their direct impact on firms' activity.

The unfavourable impact of the prolonged crisis on firms in Croatia is clearly evident from the survey results. Around three-quarters of firms recorded a moderate or strong decrease in activity, which was due to some of the following adverse factors: changes in customers' ability to pay and meet contractual terms (55%), changes in the level of demand for products/services (46%), volatility/uncertainty of demand (44%), access to supplies necessary for production from usual suppliers (24%) and access to external financing through the usual channels (21%). Thirty-five per cent of the firms considered that the impact of at least one of the above mentioned factors on the activity of the firm was very strong. Furthermore, those firms that indicated a strong decrease in activity mostly believed that the factors causing the fall in activity were long-lasting (73%), which is in line with the recorded macroeconomic developments.

Data on changes in the economic environment clearly reflect the most important economic problems

Croatian firms are faced with. The widespread illiquidity shock, due to customers' declined ability to pay, is not surprising as illiquidity may have an adverse effect on firms, whose activity is directly exposed to the negative demand shock, but also on firms that have not directly suffered any other economic shock[2].

In addition, the distribution of the demand shock reflects the economic developments recorded in individual NCA activities. Thus the negative demand shock had the strongest impact on the activity of construction industry firms, which was in line with the recorded cumulative decrease in gross value added in that sector by over 40%. On the other hand, services and trade sectors proved to be the most resilient to crisis, although one third of the firms in these sectors did feel the negative impact of the crisis. In total, the negative shock of domestic demand (recorded in 49% of the firms) was stronger than the shock of foreign demand, faced by about 24% of the firms. The decrease in demand was reflected unevenly in firms in Croatia, depending on their size. Almost 63% of firms with fewer than 50 employees recorded a negative demand shock, as compared with 44% of medium-sized firms (50 – 199 employees) and 35% of large firms (+200 employees).

With regard to the importance of financing as support to the development of firms' activity and economic activity in general, the survey investigates whether firms were faced with non-accessibility of loans, and whether the existing financing conditions (interest rate and other contract terms) were too onerous for effective firm financing. Only 21% of the respondents think that reduced access to external financing through the usual channels has had an unfavourable effect on firm's activity. Therefore, it seems that the shock of financing was much less evident when compared with the illiquidity or demand shocks[3]. However, the availability and conditions of different segments of financing were analysed in more detail in further questions. The results show that although, in comparison with other shocks, firms relatively rarely perceived the adverse impact of the financing shock on firms' activity, 34% of the firms considered that non-accessibility of loans for the financing of working capital, new investment or debt refinancing was relevant or very relevant for firm activity, while as high as 52% of the firms considered that the conditions of financing for working capital, the financing of new investment or debt refinancing were onerous. The survey results show that it was in the trade sector that the smallest share of firms were faced with the much emphasised problem of non-accessibility of loans, i.e., with too onerous lending conditions.

The results presented above clearly show that illiquidity and the prolonged demand shock were the main unfavourable economic shocks that Croatian firms

Table 1 Impact of customers' ability to pay and meet contractual terms and impact of the level of demand for products during 2010 – 2013 on firm activity, by NCA, share of firms, in %

	Customers' ability to pay and meet contractual terms			Level of demand for products/services		
	Moderate/ strong decrease	Unchanged	Moderate/ strong increase	Moderate/ strong decrease	Unchanged	Moderate/ strong increase
Manufacturing	46	40	14	47	18	35
Construction	82	17	1	76	12	11
Trade	57	39	4	43	9	48
Services (H-J, L-N)	55	36	10	36	30	34
Total	55	36	9	46	19	35

Note: The presented results have been weighted by employment-adjusted weights, which equal the total population employment in each stratum divided by the number of firms, in each stratum, in the realised sample. The above weight is equal for all firms in a specific stratum.
Source: The WDN survey conducted by the HNB.

2 The adoption of the Financial Operations and Pre-bankruptcy Settlements Act (Official Gazette 108/2012) was an attempt to reduce the high illiquidity. The Act has been in force since October 2012, and prescribes that the deadline for meeting monetary obligations between business entities may be up to 60 days. According to preliminary results, it seems that this act has not succeeded in reducing the time for meeting monetary obligations significantly.

3 These results are in line with HNB's Bank lending survey results, showing that credit standards applied to approval of loans to enterprises become only slightly tighter during 2012 and 2013. For more information see HNB (2014).

Table 2 Relevance of financing components for firms, during 2010 to 2013, share of firms, in %

	Not relevant	Of little relevance	Relevant	Very relevant
Credit was not available to finance working capital	60	11	20	9
Credit was not available to finance new investment	52	20	20	8
Credit was not available to refinance debt	66	13	13	8
Credit was available to finance working capital, but conditions (interest rate and other contractual terms) were too onerous	49	11	27	13
Credit was available to finance new investment, but conditions (interest rate and other contractual terms) were too onerous	42	12	36	10
Credit was available to refinance debt, but conditions (interest rate and other contractual terms) were too onerous	55	14	20	11

Note: The presented results have been weighted by employment-adjusted weights.
Source: The WDN survey conducted by the HNB.

faced. Also, the majority of the firms faced unfavourable conditions (interest rates or other conditions) in some of the segments of financing. For this reason, the survey analyses how firms have adjusted their activity to unfavourable economic conditions. When faced with an unfavourable economic shock, firms may cut total costs, decrease the volume of the output, reduce their margins or adjust the prices of their products. The previous research carried out during the second wave of the WDN at the very beginning of the crisis of 2009 (Fabiani et al., 2015) showed that cutting costs was the most important firm adjustment strategy used in the EU, while reduction in prices, output and margins were used more rarely. Also, the authors show that immediately after the outbreak of the crisis, firms in the EU primarily reduced labour costs, while the adjustment of input costs and the costs of financing were less frequent. Below is an analysis of the movements of costs of the firms surveyed in Croatia, with a special emphasis on the detailed cost components firms adjusted during the crisis.

Results show that slightly less than one third of the firms (28%) recorded a moderate or strong decrease in total costs, with a simultaneous decrease in labour costs in 27% of the firms. The reduction of labour costs was the most widespread in the manufacturing and business services sectors.

If firms that suffered a moderate or strong negative shock in demand are analysed, it is evident that adjustment by cutting their total costs was more widespread: 41% of the firms reduced their total costs, the dominant strategy being the reduction of labour costs (42%). Firms exposed to the negative shock in demand also adjusted by reducing the costs of input used in production (27%), as well as by reducing the costs of financing (19%).

As the aim of the survey on labour market and wage setting is to examine the various strategies firms use to adjust their labour costs during a crisis and, in general, to analyse the impact of the crisis on outcomes in the labour market, the questionnaire further provides a detailed analysis of the individual components of labour costs. The reduction of labour costs may be implemented by the adjustment of the labour factor in the production process, i.e., by extensive margin adjustment because of layoffs of employees, reduced employment, early retirement, etc., or by an intensive margin adjustment. In addition to the adjustment of the labour factor in the production process, the labour cost may also be reduced by wage adjustment, where we distinguish between base wage cuts and the cutting of costs related to the flexible wage components, such as bonuses and similar benefits.

Table 3 Developments in total costs and labour costs for firms during 2010 – 2013, share of firms, in %

	Moderate/ strong decrease	Unchanged	Moderate/ strong increase
Total costs	28	13	59
Total costs for firms that recorded negative shock in demand	41	13	46
Labour costs	27	25	48
Labour costs for firms that recorded negative shock in demand	42	30	28

Note: The presented results have been weighted by employment-adjusted weights.
Source: The WDN survey conducted by the HNB.

When asked about the developments in individual labour cost components, the majority of the firms considered that base wage costs remained unchanged or increased, while costs related to the flexible wage components (bonuses, fringe benefits) did not change significantly. On the other hand, costs related to the number

of permanent employees in the firm decreased for a considerable share of the firms.

The reduction of labour costs was very important for firms hit by the negative demand shock, and the reduction of costs related to the number of permanent employees was again most significant. Thus 64% of the firms that were affected by the demand shock at the same time reduced costs related to the number of permanent employees strongly or moderately[4]. The next most important category of reduction of costs for firms faced with the negative demand shock was related to the decrease in the flexible wage components (42%).[5] For this reason, wage rigidity does not necessarily have to be related to the rigidity of total labour costs. However, Croatian firms exposed to the negative demand shock made also significant savings in base wage costs as 39% of these firms recorded a decrease in the base wage of their employees.

Table 4 Developments in individual labour cost components for firms during 2010 – 2013, share of firms, in %

	All firms		Firms that recorded a negative shock in demand	
	Moderate/strong decrease	Moderate/strong increase	Moderate/strong decrease	Moderate/strong increase
Base wages or piece work rates	23	38	39	23
Flexible wage components (bonuses, fringe benefits, etc.)	24	18	42	11
Number of permanent employees	42	33	64	26
Number of temporary/fixed-term employees	25	31	39	9
Number of agency workers and others	11	6	14	2
Working hours per employee	4	7	8	3
Other components of labour costs	13	28	21	15

Note: The presented results have been weighted by employment-adjusted weights.
Source: The WDN survey conducted by the HNB.

4 Labour force adjustment

In the remaining part of the survey firms were further asked in detail about the strategies and methods used for labour force adjustment. The adjustment of labour input in the production process can develop by a reduction of the number of employees or of the number of hours worked. From 2010 to 2013, 41% of the firms needed to reduce their labour input significantly or alter its composition. Such a need to reduce labour input was more evident in firms directly hit by the demand shock (59%) than in other firms (26%). Those firms that reported a significant need to reduce labour input were asked about the strategies they used. The most frequently used strategies to reduce labour input were: non-renewal of fixed-term contracts at expiration (49%), individual layoffs (48%) and freeze or reduction of new hires (40%). The reduction of working hours and temporary and collective layoffs did not prove to be significant strategies in Croatian firms.

In addition, firms were asked whether actions related to labour input adjustments in the firm, such as dismissals or hiring, adjustment of working hours or movement of employees to other job positions within the firm became more or less onerous in the reference period. Most firms in Croatia (around 75% on average) thought that there were no relevant changes in the implementation of these actions. This question was designed and made with the aim of enabling an effective evaluation of labour market reforms to firms' activity in the EU countries.[6] Given that

4 According to Fabiani et al. (2015) the reduction of labour inputs proved to be the most frequently used strategy of labour cost reduction implemented in EU countries during 2009 at the very beginning of the crisis.

5 Babecky et al. (2009) show that firms, in the case of nominal wage rigidity, use alternative means of adjustment (e.g. the reduction of flexible wage components).

6 Most EU countries implemented labour market reforms not long after the outbreak of the crisis e.g. Estonia in 2009, Spain in 2010, Italy in 2012, etc.

Table 5 Overview of the strategies used by firms to reduce labour input or alter its composition when it was most urgent

	Relevant and very relevant, in %
Non-renewal of temporary contracts at expiration	49
Individual layoffs	48
Freeze or reduction of new hires	40
Early retirement schemes	34
Reduction of agency workers and others	25
Collective layoffs	18
Non-subsidised reduction of working hours (including reduction of overtime)	18
Temporary layoffs	7
Subsidised reduction of working hours	2

Note: The presented results have been weighted by employment-adjusted weights.
Source: The WDN survey conducted by the HNB.

period from 2010 to 2013 as the period in which no labour market reform took place, as only a smaller part of labour market reforms was implemented only in 2013, while further reforms followed in 2014.[7]

In the first phase of the labour law reform, the procedures for and duration of collective layoffs were simplified, and use of fixed-term contracts was made more flexible, while employment protection legislation for permanent contracts, hiring and firing procedures were not changed. Permanent contracts were made more flexible only in 2014, when some of the procedures for dismissing employees were simplified, and maximum compensation following unfair dismissal was decreased. Although dismissal of employees with permanent contracts remained relatively complex, the overall reform in both phases made the Croatian labour market considerably more flexible and the employment protection legislation neared the average of other countries.

Since the second phase of the labour law reform

Table 6 Employment protection legislation index and its subcomponents before and after labour law reform

	Index of employment protection for regular contracts (EPR)	Index of employment protection in collective dismissals (EPC)	Index of employment protection for temporary contracts (EPT)
Croatia 2013, before labour law reform	2.55	3.75	2.21
Croatia in 2013, after the adoption of phase 1 of labour law reform	2.55	3.00	1.96
Croatia in 2014, after the adoption of phase 2 of labour law reform	2.28	2.25	1.96
OECD countries average, 2013	2.04	2.91	2.08

Note: Indicator values can range from 0 to 6. The value of 0 denotes extremely flexible and the value of 6 denotes extremely rigid labour legislation.
Sources: HNB (2013), Kunovac, M. (2014), HNB (2014) and OECD (2013).

the labour market reform in Croatia was implemented only in the second half of 2013 and in early 2014, while the reference period mentioned in the survey refers to the period from 2010 to 2013, this makes the interpretation of the results on the impact of labour market reforms on individual activities in the labour market considerably more onerous. It is possible that in their responses some of the firms took into consideration the impact of the labour law reform from July 2013, but they did not think that it brought significant changes in the implementation of activities related to the labour force adjustment. On the other hand, it is possible that firms evaluated the (later implemented and adopted in August 2014) was only announced at the time when the survey was prepared, without additional information about its possible content, and taking into consideration the observed rigidities in the labour force adjustment, respondents were additionally asked whether they considered labour law reforms in Croatia necessary in specific areas. Interestingly enough, about 50% of the respondents considered labour law reforms to reduce hiring and firing costs to be necessary. This result is in line with the relatively high employment protection legislation of permanent contracts (EPR) that characterised the Croatian labour

7 If the respondents answered that during 2010 – 2013 they observed any changes in the difficulty of labour force adjustment in the firm, in the next question they were asked whether they attributed such changes to labour law reforms, changes in the implementation of legal practice/laws, changes in the behaviour of trade unions or changes in the behaviour of individuals. Results show that 50% of the respondents attributed the recorded changes in collective layoffs to the changes in the labour law. Amendments to the labour law from July 2013 shortened the maximum permissible time for the delay in the implementation of collective layoffs considerably (from 90 to 30 days), while amendments from August 2014 simplified the procedure of collective layoffs, as the obligation to prepare a redundancy social security plan was abolished. However, it should be emphasised that the total number of responses provided by the respondents that recorded changes in the difficulty of collective layoffs was small (20%).

market before and after the adoption of the first phase of the labour law reform in 2013.

Table 7 Overview of the answers to the question "Do you consider it necessary in Croatia to have labour law reforms that would include the following changes?"
share of firms, in %

	Moderate/ strong decrease	Moderate/ strong increase
Firing costs	52	6
Hiring costs	52	8
Working hours flexibility	28	36
Early retirement costs	37	18
Minimum wages	7	49
Costs arising from collective pay agreements	39	13
Contributions for unemployed	17	28

Note: The presented results have been weighted by employment-adjusted weights.
Source: The WDN survey conducted by the HNB.

The survey also investigates the main obstacles that firms face in hiring workers with permanent contracts. Since the number of employed persons has been decreasing constantly for six consecutive years, any information on possible obstacles in hiring workers has a significant value. Some of the given answers refer directly to the developments of the business cycle, while others have a primarily structural character. Results show that the main obstacles faced by firms when hiring workers are linked directly to economic activity developments, as 77% of the firms cited uncertainty about economic conditions as a relevant or very relevant obstacle in hiring workers. In addition, more than a half of the surveyed firms agreed that the following structural rigidities acted as an obstacle in hiring workers: high payroll taxes, high costs of other inputs complementary to labour, risks that labour laws are changed, insufficient availability of employees with the required skills and high firing costs.

Table 8 Main obstacles in hiring workers with permanent contracts

	Relevant and very relevant, in %
Uncertainty about economic conditions	77
High payroll taxes	71
Costs of other inputs complementary to labour	62
Risks that labour laws are changed	61
Insufficient availability of labour with the required skills	59
Firing costs	59
Hiring costs	49
Access to finance	48
Other	45
High wages	44

Note: The presented results have been weighted by employment-adjusted weights.
Source: The WDN survey conducted by the HNB.

5 Wage adjustment

After the analysis of firms' labour cost adjustment through the reduction of labour input in the production process, the survey further examines whether firms, and in which way, adjusted the wages of their workers. The results of the previous two waves of the survey showed that firms were mostly reluctant to cut wages of their employees, even because of a strong economic shock.[8] In addition to the analysis of the frequency with which wages were frozen or reduced, detailed information about the process of wage setting in firms is collected in this section of the questionnaire, from institutional characteristics such as the collective pay agreements coverage and wage indexation to the frequency of change in wages and information on wages of newly hired workers, as this information gives an insight into the different aspects of rigidity in wage setting in the labour market.

8 The results of the first wave of the survey show that on average 2.3% of EU firms would reduce the wages of their employees due to a hypothetical economic shock (WDN Final Report, 2009). The results of the second wave of the survey show that 3.2% of EU firms effectively reduced wages of their employees as a response to the beginning of the financial crisis in Europe (Fabiani et al., 2015).

5.1 Collective bargaining

Before the analysis of wage dynamics, the survey collects information about the use of collective pay agreements in Croatian firms. Empirical studies have shown that there is a positive relationship between the coverage of employees by collective pay agreements and real wage rigidity downward[9], i.e., that a higher coverage of collective pay agreements in the economy leads to increased rigidity of real wages. The share of employees covered by collective pay agreements is the key indicator of the incidence of collective bargaining. The results of the survey among firms show that in Croatia in 2013 wages for about 47% of those employed in the private sector were regulated by collective pay agreements (implemented at national, regional, sectoral or occupational level or at the firm level). The coverage of workers by collective pay agreements in large firms reached 66%, while in smaller and medium-sized firms it was much lower, ranging between 26% and 34%.

According to survey results, the indicator of the incidence of collective bargaining does not deviate significantly from the assessment presented by Bagić (2010), according to which about 55% of persons employed in the private sector were covered by collective pay agreements. It is worth mentioning that the formal level of coverage of workers by collective pay agreements in Croatia is relatively high, but that it does not credibly reflect the real situation and the development of collective bargaining in the private sector. The sectoral level of collective bargaining is not developed and it is not up-to-date[10]. Its importance is overly emphasised in the total coverage by collective pay agreements owing to the collective pay agreements whose term has been extended by the administrative decision of the line minister, which is particularly relevant in trade and construction.

The results of the survey show that collective bargaining in Croatia is decentralised to a large degree, and that collective pay agreements signed at the firm level prevail. It was also shown that among firms in which collective pay agreements are applied, 48% of them signed the agreement only at the firm level, 22% at the sectoral level and 30% at both levels. The above results are also in line with Bagić (2010), who, in analysing the system of collective bargaining in Croatia, points out that an important feature of this system is its high level of decentralisation, i.e., collective bargaining is predominantly at firm level (between union representatives of sectoral trade unions or the trade union leadership at the firm level and the firm's management). For this reason, the majority of valid collective pay agreements are applied at a single employer or a group of related employers (a holding), while there are a relatively small number of collective pay agreements that regulate work conditions

Table 9 Coverage by collective pay agreements in 2013

	Share of firms that applied collective pay agreements in 2013, in %		Proportion of employees covered by collective pay agreements, in %
	Agreed at the firm level	Agreed at a higher[a] level	
Total	35	23	47
Sector			
Manufacturing	39	13	41
Construction	29	27	65
Trade	25	31	42
Business services	42	27	51
Firm size (labour input)			
Micro (5 – 19)	24	17	26
Small (20 – 49)	21	14	32
Medium (50 – 199)	30	16	34
Large (≥200)	46	32	66

[a] At national, regional, sectoral or occupational level
Note: The presented results have been weighted by employment-adjusted weights.
Source: The WDN survey conducted by the HNB.

9 See, for example, Dickens et al. (2007) and Babecky et al. (2009).

10 Collective pay agreements in the private sector are on average much older and have a smaller number of amendments than agreements in the public sector.

at a larger number of employers at the sectoral level. A high fragmentation of the trade union movement[11], poor presence of sectoral unions in specific activities and inadequate organisation of employers in individual activities contribute to the underdevelopment of collective bargaining at the sectoral level. This is also abetted by the broad position of trade unions that they should focus on negotiations with the management because they think they can achieve more than if they negotiate with the employers' association, as a result of which they have no need to insist on sectoral agreements.

5.2 Nominal and real wage rigidity

The survey has further attempted to examine the extent to which downward (in)flexibility in base wages[12] is present in the Croatian economy, since numerous research papers have shown that it is one of the main reasons why, in adverse economic conditions, the burden of operating cost adjustment is placed on the reduction of labour input[13]. Notwithstanding the crisis, average nominal wages in the Croatian economy grew, although the intensity of growth slowed down significantly, relative to the pre-crisis period.

The share of the firms that froze and/or cut base wages in a specific period is used as an indicator of downward nominal wage rigidity (DNWR) in the survey. Survey results (Table 10) show that in the first years of the economic crisis (2010) relatively few firms (7%) in Croatia resorted to wage cuts in efforts to adjust to the adverse economic shock. However, this share grew year-on-year and reached 16% in 2013. The share of firms that cut wages during the mentioned period increased mostly in construction and in large firms. In addition, the percentage of workers affected by wage cuts increased significantly (from 76% in 2010 to 96% in 2013) in firms that had cut wages. By contrast, a significant and relatively stable share of firms (around 13%) froze wages during the crisis years and the percentage of affected workers was above 90% in all years. This means that downward nominal wage flexibility increased to some extent during the crisis in Croatia.

Downward real wage rigidity was estimated on the basis of the use of wage indexation, i.e., the practice of firms to adapt changes in base wages to inflation[14]. It was found that before 2010 a major share of firms (42%) had indexed wages to inflation, while this share dropped to a still high 34% between 2010 and 2013 (Table 11)[15]. The largest adjustment, i.e., reduction in real wage rigidity was recorded in trade and manufacturing as well as in large firms.

Table 10 The share of firms that froze or cut base wages

	Wage freeze		Wage cut	
	Share of firms that froze wages, in %	% workers affected	Share of firms that cut wages, in %	% workers affected
2010	13	91	7	76
2011	13	92	11	85
2012	14	93	14	83
2013	13	93	16	96

Notes: The base wage is direct remuneration excluding bonuses. Bonuses/benefits (flexible wage components) are parts of compensation different from the base wage and are usually linked to an individual's performance or the firm's performance.
The presented results have been weighted by employment-adjusted weights.
Source: The WDN survey conducted by the HNB.

Table 11 The share of firms that adapted changes in base wages to inflation

	Share of firms that indexed wages, in %	
	Before 2010	2010 – 2013
Total	42	34
Sector		
Manufacturing	54	43
Construction	21	15
Trade	55	35
Business services	28	31
Firm size (labour input)		
Micro (5 – 19)	36	44
Small (20 – 49)	44	36
Medium (50 – 199)	38	30
Large (≥200)	46	31

Note: The presented results have been weighted by employment-adjusted weights.
Source: The WDN survey conducted by the HNB.

11 There is a relatively large number of trade unions in which trade unions at the firm level have a considerable share.

12 Other strategies to reduce labour costs include: reduction of bonus payments, freeze of the rate at which promotions are filled, early retirement, recruitment of new employees at lower wages, etc.

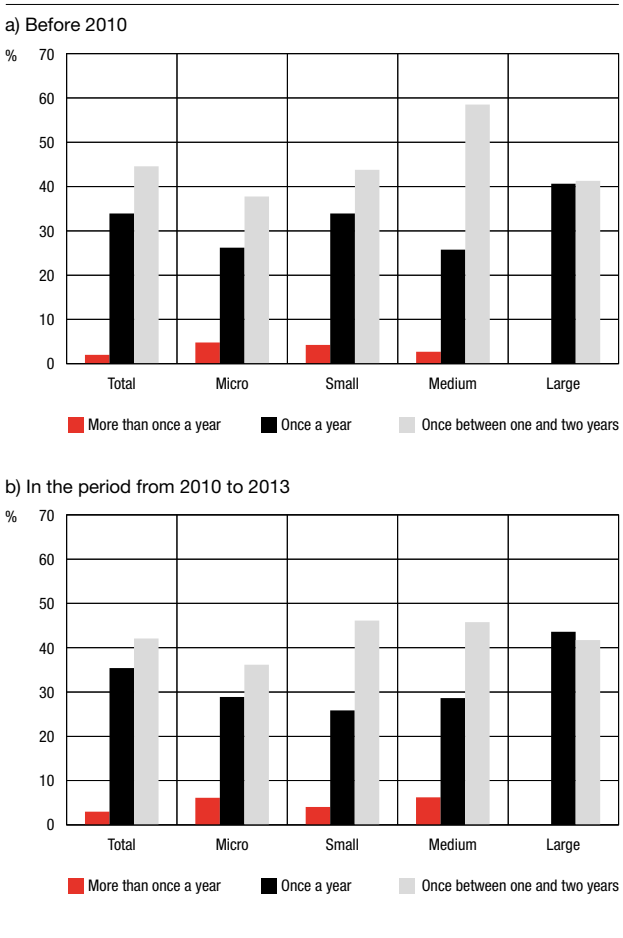
13 Fabiani et al. (2015).

14 For more details on downward nominal and real wage rigidity see Babecky et al. (2009).

15 In the literature, downward real wage rigidity is associated with the collective pay agreements coverage, which may contain indexation rules (Babecky et al. (2009); Fabiani et al. (2010)).

The frequency of the change in wages in firms is analysed as an additional indicator of the possible existence of wage rigidity[16]. If firms change the wages of their employees very rarely, it indicates a possible presence of rigidity in wage setting in the economy. Survey results show that in the period between 2010 and 2013, in the largest share of firms (42%), wages were changed less frequently than once a year[17]. The share of firms (35%) that change wages once a year was significant, while the share of firms that change wages more frequently than once a year was very small. In comparison with the period before 2010, these shares did not change significantly, i.e., during recession, the frequency of changes in wages did not change significantly.

Figure 2 Wage change frequency
share of firms, in %



Note: The presented results have been weighted by employment-adjusted weights.
Source: The WDN survey conducted by the HNB.

Furthermore, the survey was aimed at identifying[18] the most important reasons why firms were reluctant to cut base wages as a strategy to adapt to adverse economic shocks. The survey offered a list with nine economic theories of downward wage rigidity, each summarised in one sentence, easily understood by the general public. The respondents were allowed to select several theories they found relevant for their firm.

Table 12 The main theories of wage rigidity – reasons for giving up on base wage cuts

	Relevant and very relevant, in %
1 In presence of the wage cut the most productive employees might leave the firm.	78.5
2 Employees compare their wages to that of similarly qualified workers in other firms in the same market.	71.0
3 It would have a negative impact on employees' morale.	69.5
4 It would reduce employees' efforts, resulting in less output and poorer service.	60.4
5 It would create difficulties in attracting new workers.	60.0
6 A wage cut would increase the number of employees who quit, increasing the cost of hiring and training new workers.	56.4
7 Workers dislike unpredictable reductions in income. Therefore, workers and firms reach an implicit understanding that wages will neither fall in recessions nor rise in expansions.	55.6
8 It would damage the firm's reputation as an employer, making it more difficult to hire workers in the future.	54.8
9 Labour regulation/collective agreements prevent base wages from being cut.	47.7

Note: The presented results have been weighted by employment-adjusted weights.
Source: The WDN survey conducted by the HNB.

Survey results suggest that downward wage rigidity in Croatia is best explained by the theory according to which the most productive employees would leave the firm if there were a wage cut, the theory according to which employees compare their wages to that of similarly qualified workers in other firms and the theory according to which a cut in the base wage would have a negative impact on employees' morale. The first and the third ranked theories belong to the group of efficiency wage theories. The first ranked theory claims that employers would rather resort to dismissing employees as this is effected selectively so that less productive employees are laid off. The theory according to which a base wage cut would have a negative effect on employee morale explains wage rigidity by the wage level directly

16 For results related to the frequency of wage and price changes obtained on the basis of the earlier WDN survey, see Druant et al. (2009).

17 This answer includes firms that change wages in the intervals between one year and two years (8% of firms), every two years (14%) and less frequently than once in two years (20%).

18 This question was included in the WDN survey conducted in the previous rounds of surveying, but because of its importance, it was also included in the WDN survey conducted by the HNB in 2014.

affecting worker productivity, and so a reduction in pay might have a negative effect on employee morale and result in a reduction of productivity. Furthermore, the theory according to which employees compare their wages to that of similarly qualified workers in other firms is based on the assumption that employee productivity or effort depends on the extent to which employees believe that their wages are fair for the type of job they do. On the other hand, institutional obstacles to wage cuts, such as labour regulation and collective pay agreements, were found to be somewhat less significant reasons for downward wage rigidity in Croatia.

5.3 Wage rigidity for newly hired workers

The survey also examines the existence of wage rigidity for newly hired workers, which in this case implies the tendency that entry wages of newly hired workers do not deviate significantly from the wages of the existing employees with similar qualifications and work experience in the firm. Research papers show that the cyclical volatility of wages is more expressed in newly hired employees than in already existing employees (Pissarides, 2009), while the absence of flexibility in the setting of wages of new employees indicates rigidity of wage setting in the economy. The survey results of Croatian firms show that the cost for a new worker before 2010 in 77% of the firms was similar to the cost for existing workers with corresponding qualifications and work experience, while in the rest of the recession period (from 2010 to 2013), this share fell to 66%, but still remained relatively high. This points to the existence of a considerable rigidity of wages of newly hired workers in Croatia.

In addition, the respondents were asked to name the main factor[19] that influenced the level of the entry wage of newly hired workers, with the following offered options: the collective pay agreement, the wages of employees with similar qualifications in the firm or outside the firm and the availability of workers with similar qualifications in the labour market, so that the first two factors were included in internal factors, and the other two in external factors. Survey results indicate that in the majority of Croatian firms (68%) internal factors have the most significant influence on determining the entry wage of newly hired workers. Those firms (43%) that stated that wages of the existing employees in the firm with similar qualifications and experience were the most important internal factor accounted for the largest share. The share of firms in which the collective pay agreement is the most relevant internal factor in setting the entry wage for the newly employed workers is much smaller

Table 13 The importance of internal or external factors on setting the entry wage for newly hired workers

share of firms, in %

	Internal factors			External factors			
	Collective pay agreement	Wage of similar employees in the firm	Total	Wage of similar employees outside the firm	Availability of similar workers in the labour market	Total	Other factors
Total	25	43	68	7	17	24	8
Sector							
Manufacturing	29	48	77	0	18	18	5
Construction	18	70	88	3	4	7	5
Trade	9	32	41	14	37	51	8
Business services	33	36	69	10	7	17	14
Firm size (labour input)							
Micro (5 – 19)	11	44	55	8	27	35	10
Small (20 – 49)	10	58	68	4	19	23	9
Medium (50 – 199)	23	53	76	3	11	14	10
Large (≥200)	35	33	68	9	16	25	7

Note: The presented results have been weighted by employment-adjusted weights.
Source: The WDN survey conducted by the HNB.

19 This question was included in the WDN survey conducted in the previous rounds of surveying, but because of its importance, it was also included in the WDN survey conducted by the HNB in 2014.

(25%). Large firms in which collective pay agreements are the most important factor influencing the setting of wages of the newly hired workers are an exception. The mentioned result is in line with the significant share of large firms that apply collective pay agreements (Table 9). External factors, i.e., the situation in the labour market, have the largest impact on the setting of the entry wages of newly hired workers in a smaller share of firms (24%). Firms that emphasised the importance of labour supply, i.e., the availability of workers with similar characteristics in the labour market (17%), had a much higher share than firms that mentioned the wage of similar employees outside the firm (7%).

5.4 Demonstrative effect of wage cuts in the public sector

For the purposes of the fiscal consolidation, the Croatian government adopted the decision on wage cuts in the public sector by 3% in February 2013. A specific question was included in the survey, which referred only to Croatian firms: Did the wage cut in the public sector have a direct or indirect impact on the average wage in a specific firm? Survey results indicate that the Croatian government's decision on the wage cut in the public sector did not have a widespread demonstrative effect on the surveyed firms. The majority of the firms, 91% of them, stated that the wage cut in the public sector did not have any effect on the movement of wages of their employees, while only 9% of the firms claimed that it encouraged a wage cut for their employees. The above conclusions apply to firms in all sectors and do not depend on the size of the firms. The relatively restricted distribution of the demonstrative effect of the wage cut in the public sector is not surprising as the government's decision on wage cuts in the public sector was implemented only in February 2013, which was the last year of the reference period of the survey and the fifth year from the beginning of economic contraction.

Table 14 Impact of the wage cut in the public sector on developments in wages

share of firms, in %

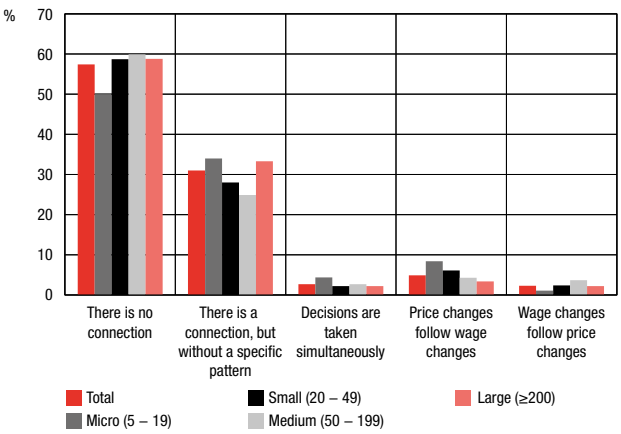
	Yes, it helped us justify the wage cut in our firm.	Yes, it reduced the attractiveness of employment in the public sector.	No, it did not have any impact.
Total	7	2	91
Sector			
Manufacturing	4	1	96
Construction	1	0	99
Trade	13	3	84
Business services	7	3	90
Firm size (labour input)			
Micro (5 – 19)	2	3	95
Small firms (20 – 49)	1	5	94
Medium (50 – 199)	4	3	93
Large (≥200)	11	0	89

Note: The presented results have been weighted by employment-adjusted weights.
Source: The WDN survey conducted by the HNB.

6 Existence of synchronisation between decisions on wage and price changes[20]

Survey results show that in 57% of the firms there is no time synchronisation between the adoption of decisions on wage and price changes at the firm level. A further 31% of the firms claimed that a time synchronisation in adopting the above mentioned decisions did exist, but that there was no specific and usual sequence of the adoption of decisions. Only about 10% of the firms stated that the mentioned decisions were adopted in a specific sequence: in 5% of the firms, decisions on price changes followed after the decision on wage changes, in 2% of the firms, it was the opposite case, while 3% of the firms adopted decisions on wage and price changes simultaneously.

Figure 3 Synchronisation between decisions on wage and price changes
share of firms, in %



Note: The presented results have been weighted by employment-adjusted weights.
Source: The WDN survey conducted by the HNB.

7 Conclusion

Data collected during the conduct of the survey on labour market and wage setting in Croatia during the second half of 2014 show that as many as three quarters of firms in Croatia were exposed to some sort of adverse economic shock, which had a negative impact on the activity of the firm in the period from 2010 to 2013. The illiquidity shock, the demand shock and unfavourable financing conditions were the most widespread economic shocks. With regard to the distribution of economic shocks, firms adjusted to the newly created conditions by reducing total costs, i.e., primarily by reducing labour costs.

The dominant strategy for the reduction of labour costs was the reduction of the labour input, i.e., through individual layoffs, but also through the non-renewal of fixed-term contracts at expiration and freeze and reduction of new hires. Despite the strong reduction of the labour input, survey results show that probably no new hiring will follow even after the start of the economic recovery. Although the majority of firms considered that unfavourable developments in the business cycle prevent the hiring of workers with a permanent contract, a very high share of firms considered high payroll taxes, high costs of other inputs complementary to labour, risks that labour laws are changed, insufficient availability of employees with the required skills and high firing costs as obstacles in the hiring of new workers. The reduction of high firing costs was also mentioned as one of the priorities, which, according to respondents' opinion, future labour law reforms should take into consideration.

Although the reduction of labour input was the dominant strategy of labour cost adjustment in Croatia, one third of the firms also implemented a cut or freeze of their workers' wages in the adjustment to the crisis. In the early years of the crisis (2010), relatively few firms (7%) in Croatia resorted to nominal wage cuts in efforts to adjust to an adverse economic shock. However, this share grew year-on-year and reached 16% in 2013. The percentage of workers covered by wage cuts increased significantly (from 76% in 2010 to 96% in

20 This question was included in the WDN survey conducted in the previous rounds of surveying, but because of its importance, it was also included in the WDN survey conducted by the HNB in 2014.

2013). Although this indicates a reduction of wage rigidity in Croatia during the reference period, other, additional, indicators suggest that despite this, wage setting in Croatia cannot be considered flexible. Thus a significant share of the firms change wages less frequently than once a year, one third of the firms index wages in relation to inflation, and collective pay agreements regulate wages for about a half of the employees in the private sector, in which the coverage of workers by collective pay agreements in large firms is much higher. Survey results also show the relative rigidity of wages of new employees that in the majority of firms are similar to those for the existing workers with corresponding qualifications and work experience. On the other hand, despite the observed rigidities, the collected data show that the intensity of rigidity, related to the incidence of the nominal wage cuts and the indexation of wages and to the wages of new employees, decreased from 2010 to 2013, as compared with the period before 2010.

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Appendix A Carrying out the survey

In the period from September to November 2014, the HNB conducted a survey on the labour market and wage setting in Croatia on a sample of firms with five or more employees in the manufacturing, construction, trade, and business services sectors. In view of the prolonged economic crisis present in the Croatian economy from 2008, the aim of the survey was to collect detailed information on various strategies firms used to adjust their activity to long-lasting unfavourable economic conditions in the period from 2010 to 2013. The survey questionnaire was prepared within the WDN and it was harmonised among the EU countries, which enables comparisons of the obtained data. In mid-2014 and in the beginning of 2015, the survey was also carried out in other EU member states, except Finland, Sweden and Denmark. The survey was complex and contained a total of 35 questions. The questionnaire contained a set of questions common to the surveys of all countries (core questions), some standardised questions that were not obligatory so that each country could include them if it considered them to be important (non-core questions) and country questions, in this case specific for Croatia (country specific questions). The questionnaire is attached in Appendix B. The verification of the appropriateness and comprehensibility of the questions was enabled by a pilot survey of firms that had not been selected in the gross sample. Minor alterations and adjustments to the questionnaire itself were made on the basis of the pilot survey to facilitate the individual completion of the survey to the respondents.

The survey was carried out by the market research agency Ipsos Puls. The survey was carried out on a sample of domestic firms from four sectors – manufacturing, construction, trade and services, according to the following list (according to the NCA 2007, which is adjusted to the NACE Rev. 2):

1. C Manufacturing;
2. F Construction;
3. G Wholesale and retail trade; repair of motor vehicles and motorcycles;
4. H-J and L-N Services;

H Transportation and storage;
I Accommodation and food service activities;
J Information and communication;
L Real estate activities;
M Professional, scientific and technical activities;
N Administrative and support service activities.

The sample was formed by Ipsos Puls, and consists of 4548 firms, 648 in construction, 1361 in manufacturing, 1365 in the trade sector and 1174 in the segment of business services. The population covered by the survey included all firms registered in the Republic of Croatia, while the sample framework itself was taken from the Financial Agency (FINA) database of annual financial statements for 2012. The final gross sample of firms was a two-stage stratified sample, i.e.:

a) by activity (four of the above mentioned segments);
b) by firm size (four sizes: 5 to 19 employees, 20 to 49 employees, 50 to 199 employees and 200 and more employees).

Within each of the sixteen strata, firms were selected randomly.

The survey was carried out by an online and telephone survey. It included a total of 301 firms with over five employees from the private sector from the whole of Croatia. Ipsos Puls sent an e-mail invitation to all firms from the gross sample to participate in the survey, with the explanation of the objectives of the survey itself. In order to increase the response to the survey, a copy of the invitation letter signed by Governor Boris Vujčić, on behalf of the HNB, was attached to the survey. The questionnaire had to be sent to respondents from the senior management of firms taking part in the setting of wages and prices, primarily to the executive directors of firms or directors of human resources departments, i.e., finance directors and members of management boards.

The surveying procedure was designed in such a way that each firm received a link to the web address with the online version of the survey within the invitation e-mail. Respondents could contact Ipsos Puls agency during working hours by telephone and ask them for any clarifications or any other assistance in relation to the project. The agency had trained employees for this purpose. In addition to the contact by telephone, respondents could also send an e-mail to Ipsos Puls if they had any questions or problems to an e-mail address created especially for this purpose. Seven days after sending invitation e-mails, e-mails were sent to firms as reminders about the survey. As the initial response to the online survey was relatively small, firms were also contacted by

telephone. A total of 301 firms responded to the survey; responses to 199 surveys were by telephone and to 102 online. This means that the response rate was relatively low and stood at 7%.

Table A1 Structure of firms in the population and firms, which participated in the survey

a) Population

	Number of firms				% in total
	5-19	20-49	50-199	≥200	
Construction	10.2%	2.2%	1.1%	0.3%	13.7%
Manufacturing	13.2%	4.4%	3.1%	1.0%	21.7%
Trade	24.1%	4.1%	1.6%	0.6%	30.4%
Business services	27.0%	4.4%	2.2%	0.7%	34.2%
% in total	74.4%	15.0%	8.0%	2.6%	100.0%

a) Population

	Number of employees				% in total
	5-19	20-49	50-199	≥200	
Construction	2.6%	1.9%	2.8%	3.5%	10.8%
Manufacturing	3.6%	3.8%	8.6%	16.7%	32.7%
Trade	6.0%	3.4%	4.1%	10.9%	24.3%
Business services	6.6%	3.7%	5.7%	16.2%	32.2%
% in total	18.7%	12.8%	21.2%	47.3%	100.0%

b) Realised sample

	Number of firms				% in total
	5-19	20-49	50-199	≥200	
Construction	2.3%	4.3%	2.7%	0.3%	9.6%
Manufacturing	5.6%	12.6%	15.0%	5.3%	38.5%
Trade	8.3%	3.7%	5.6%	1.3%	18.9%
Business services	13.3%	7.0%	9.3%	3.3%	32.9%
% in total	29.6%	27.6%	32.6%	10.3%	100.0%

b) Realised sample

	Number of employees				% in total
	5-19	20-49	50-199	≥200	
Construction	0.2%	1.2%	3.2%	0.7%	5.3%
Manufacturing	0.6%	3.8%	14.8%	21.7%	40.9%
Trade	0.9%	1.3%	4.5%	10.2%	16.9%
Business services	1.1%	2.2%	8.0%	25.6%	36.9%
% in total	2.8%	8.4%	30.5%	58.3%	100.0%

If the realised sample is observed by the number of employees, it is evident that construction and trade, as well as firms of up to 49 employees are underrepresented. The results obtained on the basis of employment-adjusted weights are used in the analysis. These weights are calculated in such a way that the total population employment in each stratum is divided by the number of firms, in each stratum, in the realised sample.

Appendix B Survey on labour market and wage setting in Croatia

Survey on labour market and wage setting (WDN)

This survey is aimed at collecting information about changes in practices in the last few years as a result of the crisis. It is a follow-up to the two previous waves (2007, 2009). The survey constitutes an integral part of an ESCB project on wage dynamics, involving the central banks of the euro area and of other EU countries, and is conducted through a harmonised questionnaire. The importance the ESCB places on conducting this survey is signalled by the accompanying letter by the Governor of the Croatian National Bank, Boris Vujčić.

In the case of Croatia, the survey is conducted by Ipsos Puls, agency for market research, under the supervision and the authority of the Croatian National Bank.

Your cooperation is extremely valuable, but your participation is totally on a voluntary basis and your eventual refusal to participate will not have any implication.

Firm-level information collected through the questionnaire will be treated on a secure and confidential basis, and will be used exclusively in anonymised format and for research purposes. A copy of the main aggregate findings of the survey will be sent to you. Please provide the name of a contact person for further correspondence.

***

The questionnaire is addressed to either the chief executive officer or director of the human resources department (or finance directors and members of the management board) and is organised in four sections:
Section 1 – Information about the firm
Section 2 – Changes in the economic environment
Section 3 – Labour force adjustments
Section 4 – Wage adjustments
Section 5 – Price adjustments.

Most questions are qualitative and only a few of them require figures. If exact numbers are difficult for you to find, please use approximate answers. We estimate that the questionnaire takes approximately 30 minutes to complete. The questionnaire refers to the firm and not the establishment (which is a single physical location at which business is conducted) and the reference time period covered is stated in each question. Since the aim is to investigate changes in practices following the financial crisis, most questions, however, refer to practices applied in the period between 2010 to 2013.

The aim of each section is explained and questions contain instructions. The links with specific questions will contain additional instructions, if appropriate.

Contacts and help: In case you need any information or clarification, you can contact: online.hr@ipsosadria.com

C1 Information about the firm

C1.1 – What is your main sector of activity? NCA 2007 sectoral classification (of economic activities)

C1.2 – What was the first year of operation of your firm? _____

C1.3 – What is the establishment, ownership status and autonomy of your firm at the end of 2013?

Establishment:		Ownership:		Autonomy:	
Single establishment firm	❑	Mainly domestic	❑	Parent company	❑
Multi-establishment firm	❑	Mainly foreign	❑	Subsidiary /affiliate	❑
				N/A	❑

C2 Changes in the economic environment

This section aims at assessing the main changes in economic environment your firm suffered **during 2010 – 2013.** When answering the questions please refer to **"the most significant changes"** taking place over this period.

C2.1 – Please indicate how was your firm's activity affected during 2010 – 2013 with respect to each of the following aspects?
Please choose ONE option for each line.

	Strong decrease	Moderate decrease	Unchanged	Moderate increase	Strong increase
The level of demand for your products/services	❑	❑	❑	❑	❑
Volatility/uncertainty of demand for your products/services	❑	❑	❑	❑	❑
Access to external financing through the usual financial channels	❑	❑	❑	❑	❑
Customers' ability to pay and meet contractual terms	❑	❑	❑	❑	❑
Access to supplies from your usual suppliers	❑	❑	❑	❑	❑

C2.2 – For those aspects, which affected your firm strongly, please specify whether you regard the effect to be only transitory, partly persistent or long-lasting for 2010 – 2013?
Please choose ONE option for each line.

	Transitory	Only partly persistent	Long-lasting
The level of demand for your products/services	❑	❑	❑
Volatility/uncertainty of demand for your products/services	❑	❑	❑
Access to external financing through the usual financial channels	❑	❑	❑
Customers' ability to pay and meet contractual terms	❑	❑	❑
Access to supplies from your usual suppliers	❑	❑	❑

C2.3 – With regard to finance, please indicate for 2010 – 2013 the relevance for your firm of each one of the following happenings.
Please choose ONE option for each line. *Note: credit here means any type of credit, not only a bank loan.*

	Not relevant	Of little relevance	Relevant	Very relevant
Credit was not available to finance working capital	❑	❑	❑	❑
Credit was not available to finance new investment	❑	❑	❑	❑
Credit was not available to refinance debt	❑	❑	❑	❑
Credit was available to finance working capital, but conditions (interest rate and other contractual terms) were too onerous	❑	❑	❑	❑
Credit was available to finance new investment, but conditions (interest rate and other contractual terms) were too onerous	❑	❑	❑	❑
Credit was available to refinance debt, but conditions (interest rate and other contractual terms) were too onerous	❑	❑	❑	❑

C2.4 – Please indicate how each one of the components of total costs listed below changed during 2010 – 2013?
Please choose ONE option for each line. See definitions in the Appendix.

	Strong decrease	Moderate decrease	Unchanged	Moderate increase	Strong increase
Total costs	❑	❑	❑	❑	❑
Labour costs	❑	❑	❑	❑	❑
Financing costs	❑	❑	❑	❑	❑
Costs of supplies	❑	❑	❑	❑	❑
Other costs (please specify _____)	❑	❑	❑	❑	❑

C2.5 – Please indicate how each of the labour cost components below changed during 2010 – 2013.
Please choose ONE option for each line. See definitions in the Appendix.

	Strong decrease	Moderate decrease	Unchanged	Moderate increase	Strong increase
Base wages or piece work rates	❑	❑	❑	❑	❑
Flexible wage components (bonuses, fringe benefits, etc.)	❑	❑	❑	❑	❑
Number of permanent employees	❑	❑	❑	❑	❑
Number of temporary/fixed-term employees	❑	❑	❑	❑	❑
Number of agency workers and others (free-lance work, etc., not hired under employment contracts)	❑	❑	❑	❑	❑
Working hours per employee	❑	❑	❑	❑	❑
Other components of labour costs (please specify _____)	❑	❑	❑	❑	❑

C2.6 – How did prices and demand for your main product evolve during 2010 – 2013?
Please choose ONE option for each line.

	Strong decrease	Moderate decrease	Unchanged	Moderate increase	Strong increase
Domestic demand for your main product/service	❑	❑	❑	❑	❑
Foreign demand for your main product/service	❑	❑	❑	❑	❑
Prices of your main product in domestic markets	❑	❑	❑	❑	❑
Prices of your main product in foreign markets	❑	❑	❑	❑	❑

C.3 Labour force adjustments

C3.1 – How many employees did your firm have on the payroll at the end of 2013? How many agency workers and other workers did your firm have on the payroll at the end of 2013? *For definitions see Link.*

Total number of employees _____

Total number of agency workers and others _____

Of which:

Permanent full-time _____

Permanent part-time _____

Temporary or fixed-term _____

C3.2 – At the end of 2013, how were your firm's employees approximately distributed across the following occupational and tenure groups?
(See definitions of the ISCO occupational groups and the definition of tenure on the Link.)

OCCUPATIONAL GROUPS			*JOB TENURE*	
Higher skilled non-manual	(ISCO: 1, 2, 3)	_____%	Below 1 year	_____%
Lower skilled non-manual	(ISCO: 4 and 5)	_____%	Between 1 and 5 years	_____%
Higher skilled manual	(ISCO: 7 and 8)	_____%	More than 5 years	_____%
Lower skilled manual	(ISCO: 9)	_____%		
		TOTAL (= 100%)		TOTAL (= 100%)

C3.3a – Over the period from 2010 to 2013, did you need to significantly reduce your labour input or to alter its composition?

Need to reduce labour input or alter its composition	YES ❑	NO ❑

C3.3.bis – At the moment when you needed most to significantly reduce your labour input or to alter its composition, which of the following measures did you use?
Please choose ONE option for each line. See definitions in the following Link.

	Not at all	Marginally	Moderately	Strongly
Collective layoffs	❑	❑	❑	❑
Individual layoffs	❑	❑	❑	❑
Temporary layoffs	❑	❑	❑	❑
Subsidised reduction of working hours	❑	❑	❑	❑
Non-subsidised reduction of working hours (including reduction of overtime)	❑	❑	❑	❑
Non-renewal of temporary contracts at expiration	❑	❑	❑	❑
Early retirement schemes	❑	❑	❑	❑
Freeze or reduction of new hires	❑	❑	❑	❑
Reduction of agency workers and others	❑	❑	❑	❑

C3.4 – Please indicate, in your view or your experience, whether each of the following actions has become more or less difficult, compared to the situation in 2010?
Please choose ONE option for each line.

	Much less difficult	Less difficult	Unchanged	More difficult	Much more difficult
To lay off employees for economic reasons (collectively)	❑	❑	❑	❑	❑
To lay off employees for economic reasons (individually)	❑	❑	❑	❑	❑
To dismiss employees for disciplinary reasons	❑	❑	❑	❑	❑
To lay off employees temporarily for economic reasons	❑	❑	❑	❑	❑
To hire employees (cost of recruitment, including administrative costs)	❑	❑	❑	❑	❑
To adjust working hours	❑	❑	❑	❑	❑
To move employees to positions in other locations	❑	❑	❑	❑	❑
To move employees across different job positions	❑	❑	❑	❑	❑
To adjust wages of existing employees	❑	❑	❑	❑	❑
To lower wages at which you hire new employees	❑	❑	❑	❑	❑

NC3.4b – Which factors caused changes you reported in C3.4?
Please choose ONE option for each line.

	Reforms of labour laws	Enforcement of labour laws	Changes in trade unions behaviour	Changes in individual behaviour
To lay off employees for economic reasons (collectively)	❑	❑	❑	❑
To lay off employees for economic reasons (individually)	❑	❑	❑	❑
To dismiss employees for disciplinary reasons	❑	❑	❑	❑
To lay off employees temporarily for economic reasons	❑	❑	❑	❑
To hire employees (cost of recruitment, including administrative costs)	❑	❑	❑	❑
To adjust working hours	❑	❑	❑	❑
To move employees to positions in other locations	❑	❑	❑	❑
To move employees across different job positions	❑	❑	❑	❑
To adjust wages of existing employees	❑	❑	❑	❑
To lower wages at which you hire new employees	❑	❑	❑	❑

C3.5 – How relevant are each of the following factors as obstacles in hiring workers with a permanent, open-ended contract?
Please choose ONE option for each line.

	Not relevant	Of little relevance	Relevant	Very relevant
Uncertainty about economic conditions	❑	❑	❑	❑
Insufficient availability of employees with the required skills	❑	❑	❑	❑
Access to finance	❑	❑	❑	❑
Firing costs	❑	❑	❑	❑
Hiring costs	❑	❑	❑	❑
High payroll taxes	❑	❑	❑	❑
High wages	❑	❑	❑	❑
Risks that labour laws are changed	❑	❑	❑	❑
Costs of other inputs complementary to labour	❑	❑	❑	❑
Other (please specify, e.g., high minimum wages, high wages defined in collective pay agreements_____)	❑	❑	❑	❑

CS3.6 – Do you consider it necessary in Croatia to have labour law reforms that would include the following changes?

	Strong decrease	Moderate decrease	Unchanged	Moderate increase	Strong increase
Firing costs	❑	❑	❑	❑	❑
Hiring costs	❑	❑	❑	❑	❑
Working hours flexibility	❑	❑	❑	❑	❑
Costs of early retirement	❑	❑	❑	❑	❑
Minimum wages	❑	❑	❑	❑	❑
Costs arising out of collective agreements	❑	❑	❑	❑	❑
Subsidy for the unemployed	❑	❑	❑	❑	❑

C4 Wage adjustments

This section collects information on wage setting and the frequency of wage changes. Most of the questions refer to 2013, but some questions aim at assessing differences between the 2010 – 2013 period and the period before 2010.

C4.1 – IN 2013: What percentage of your firm's total costs (all operating expenses) was due to labour costs (wages, salaries, bonuses, social security contributions, training, tax contributions, contributions to pension funds, etc.)? *See definitions on the following Link.*

Labour cost /Total cost _____ %

C4.2 – What percentage of your total wage bill in 2013 was related to individual or company performance related bonuses and benefits?

_____ %

C4.3 – Did your firm apply collective pay agreements bargained and signed in 2013 within the firm (at the firm level) or outside the firm (at national, regional, sectoral or occupational level)?

	At the firm level	Outside the firm
No, such an agreement does not exist	❑	❑
No, the agreement exists but the firm opted-out	❑	❑
Yes, such an agreement is in effect	❑	❑

C4.3b – What was the proportion of your employees covered in 2013 by any collective pay agreement?

Proportion of employees covered by such an agreement (approx.) _____ %

C4.4 – How often does the collective pay agreement applied at your firm typically change?

More than once a year ❑ Once a year ❑ Once between one and two years ❑ Every two years ❑ Less frequently than once every two years ❑ Never/Not applicable ❑

C4.5 – Did your firm adapt changes in base wages to inflation before 2010? And during 2010 – 2013?
Definition of base wage – direct remuneration excluding bonuses (regular wage and salary, commissions, piecework payments).

	Before 2010	During 2010 – 2013
Yes	❑	❑
No	❑	❑
Inflation was too low so that indexation rules were not operative.	❑	❑
There were no legal or other types of indexation rules specifying such an adjustment.	❑	❑

C4.6 – How frequently was the base wage of an employee belonging to the main occupational group in your firm typically changed in your firm?
Please choose ONE option for each line.

	More than once a year	Once a year	Once between one and two years	Every two years	Less frequently than once every two years	Never/Not applicable
Before 2010	❑	❑	❑	❑	❑	❑
During 2010 – 2013	❑	❑	❑	❑	❑	❑

C4.7 – Over 2010–2013, did you freeze or cut base wages in a given year (please indicate in which years)?

	Wages were frozen		Wages were cut			Wages were neither frozen nor cut
	YES	% Workers affected	YES	% Workers affected	(average wage cut)	YES
2010	❑	_____%	❑	_____%	(%)	❑
2011	❑	_____%	❑	_____%	(%)	❑
2012	❑	_____%	❑	_____%	(%)	❑
2013	❑	_____%	❑	_____%	(%)	❑

CS 4.7a – How relevant is each of the following reasons in preventing base wage cuts?
Please choose ONE option for each line.

	Not relevant	Of little relevance	Relevant	Very relevant	Don't know
Labour regulation/collective pay agreements prevent base wages from being cut.	❑	❑	❑	❑	❑
It would reduce employees' efforts, resulting in less output and poorer service.	❑	❑	❑	❑	❑
It would have a negative impact on employees' morale.	❑	❑	❑	❑	❑
It would damage the firm's reputation as an employer, making it more difficult to hire workers in the future.	❑	❑	❑	❑	❑
In presence of the wage cut the most productive employees might leave the firm.	❑	❑	❑	❑	❑
A wage cut would increase the number of employees who quit, increasing the cost of hiring and training new workers.	❑	❑	❑	❑	❑
It would create difficulties in attracting new workers.	❑	❑	❑	❑	❑
Workers dislike unpredictable reductions in income. Therefore, workers and firms reach an implicit understanding that wages will neither fall in recessions nor rise in expansions.	❑	❑	❑	❑	❑
Employees compare their wages to that of similarly qualified workers in other firms in the same market.	❑	❑	❑	❑	❑

CS 4.7.b – Is any of the following strategies applicable in your firm for the reduction of labour costs during 2010 – 2013?
Please select all options applicable to your firm.

Reduction or suspension of bonus payments	❑
Reduction or suspension of fringe benefits	❑
Changes in shift work	❑
Slowing down or freezing the rate at which promotions are filled	❑

Recruitment of new employees (with similar skills and experience) at a wage lower than the wage of those that have left (e.g. for voluntary resignations or retirement)	❑
Using early retirement to replace employees with high wages by new employees with low wages	❑
Other strategies (please specify)	❑

CS4.7c – In relation to the main occupational group in your firm, please choose among the following options the one that is the most relevant factor in setting the entry wage for newly hired employees.
Please choose one option.

Collective pay agreement (signed at any level)	❑
Wage of similar employees in the firm	❑
Wage of similar employees outside the firm	❑
Availability of workers with similar characteristics in the labour market	❑
Other reasons (please specify) _____	❑

NC4.8 – How did the labour cost of a newly hired worker compare with that of similar (in terms of experience and task assignment) workers at your firm?

	Much lower	Lower	Similar	Higher	Much higher
Before 2010	❑	❑	❑	❑	❑
During 2010 – 2013	❑	❑	❑	❑	❑

CS4.9 – Did the wage cut in the public sector by 3% (based on the government decision from February 2013) have a direct or indirect impact on the average wage in your firm?

Yes, it had a demonstrative impact, which helped us justify the wage cut in our firm.	❑
Yes, it reduced the attractiveness of employment in the public sector.	❑
Not, it did not have any impact.	❑

C5 Price setting and price changes

This section collects information on price setting and the frequency of price changes. Some questions aim at assessing differences in 2010 – 2013 with respect to the period before 2010.

If your firm produces (or sells) more than a single good or service, the answers should refer to the "main product" ("activity" or "service"), defined as the one that generated the highest fraction of your firm's revenue in the "reference year". For instance, if your firm produces (or sells) several types of hats and shoes, by "product" we mean "hats" and "shoes" (irrespective of the specific type), whereas by "main product" we mean the one that generated the highest revenue in the "reference year".

NC5.2 – What share of the revenues generated by your firm's main products in 2013 was due to sales in the domestic market, and what share was due to sales in foreign markets?

Domestic markets	_____%
Foreign markets	_____%

NC5.4 – How would you characterise the degree of competition in the main markets (domestic and foreign) for your main product?
Please choose ONE option for each line.

	Weak	Moderate	Severe	Very severe	Not applicable
Domestic markets	❑	❑	❑	❑	❑
Foreign markets	❑	❑	❑	❑	❑

NC5.6 – In 2013, how and how often did you typically change the price of your main product? ***Please choose ONE COLUMN and ONE OPTION within that column, the one that best describes the situation in your firm.***		
	ON A REGULAR TIME PATTERN	WHENEVER COSTS and/or DEMAND CONDITIONS CHANGED *(please select in this case the most typical frequency change)*
More frequently than once a year		
Daily	❑	❑
Weekly	❑	❑
Monthly	❑	❑
Quarterly	❑	❑
Half-yearly	❑	❑
Once a year	❑	❑
Between one and two years	❑	❑
Less frequently than once every two years	❑	❑
Never	❑	❑
Don't know	❑	❑

CS5.7 – What is the relation between the schedule of price change and the wage change? ***Please choose one option.***	
There is no connection.	❑
There is a connection, but without a specific pattern.	❑
Decisions are taken simultaneously.	❑
Price changes usually follow wage changes.	❑
Wage changes usually follow price changes.	❑
Don't know.	❑

Please indicate the following:

a) Name of the firm _____
b) VAT identification number _____
c) Address _____
d) Name of respondent _____
e) Function of respondent _____
f) Telephone number and e-mail address of respondent _____

Question C1.3

Parent Enterprise: An incorporated or unincorporated enterprise, or group of enterprises, which has a direct investment enterprise operating in a country other than that of the parent enterprise.

Affiliate Enterprise: An incorporated or unincorporated enterprise in which a foreign investor has an effective voice in management. Such an enterprise may be a subsidiary, associate or branch.

[**Subsidiary Enterprise:** An incorporated enterprise in the host country in which another entity directly owns more than half of the shareholders´ voting power, or is a shareholder in the enterprise, and has the right to appoint or remove a majority of the members of the administrative, management or supervisory body].

Question C2.4

Total costs: all operating expenses, e.g. include telecommunications, insurance and maintenance of building and equipment, utility expenses, travelling and other miscellaneous expenses.

Question C2.5

Labour costs: wages, salaries, bonuses, social contributions, training, tax contributions, contributions to pension funds.

From the employers' point of view these are often grouped as: direct remuneration (direct pay for time worked and bonuses); other direct costs (payments in kind, payment in capital and remuneration for non-working days); indirect costs (soc. sec. contributions, vocational training and miscellaneous taxes).

Base wage – direct remuneration excluding bonuses (regular wage and salary, commissions, piecework payments).

Bonuses/benefits (flexible wage components) – part of compensation different from the base wage and usually linked to individual's performance or firm's performance.

Hourly, piece-rate and monthly base wage – base wage per hour worked, per month worked, or per pieces produced.

Question C3.1

Employees – Include all types of employees, i.e., those with employment contracts. Agency and freelance workers are excluded.

Permanent full-time – Those with employment contracts that do not set a termination date, and whose regular working hours are the same as the collectively agreed or customarily worked.

Permanent part-time – Those with employment contracts that do not set a termination date, and whose regular working hours are less than those specified for permanent full-time.

Temporary or Fixed-Term – Those with employment contracts that set a termination date or a specific period of employment. *[Include apprenticeships]*

Agency workers and others: These are workers and employees not on the payroll of the firm, such as consultants, employees being officially registered with a different company, etc. *Please check the definition because it may differ from country to country.*

Question C3.2

Occupational categories:

ISCO-08 Structure, Group Titles and Codes

Major Groups

1 Managers
2 Professionals
3 Technicians and associate professionals
4 Clerical support workers
5 Service and sales workers
7 Craft and related trades workers
8 Plant and machine operators, and assemblers
9 Elementary occupations

Job tenure is typically measured by the length of time workers have been in their current job or with their current employer, and so refers to continuing spells of employment.

Question C3.3

Regulations on dismissals/layoffs (collective or individual) are those that impose legal restrictions on dismissals and set compensation to be paid to former employees being laid off.

Subsidized short-time work means measures that subsidize hours reductions encouraging employers to reduce

working time rather than laying off workers.

Early retirement schemes is to be understood as measures allowing persons being made redundant to receive a monthly pension and/or lump sum payment before reaching the statutory retirement age.

Question C4.1

Total costs: all operating expenses (same definition as in question C2.4).

Labour costs: wages, salaries, bonuses, social contributions, training, tax contributions, contributions to pension funds.

From the employers' point of view these are often grouped as: direct remuneration (direct pay for time worked and bonuses); other direct cost (payments in kind, payment in capital and remuneration for non-working days); indirect cost (soc. sec. contributions, vocational training and miscellaneous taxes).

Question C4.9

Freeze in base wage: base wage in nominal terms remains unchanged.

Cut in base wage: base wage in nominal terms decreases.

Appendix C Survey results

Table C1 C2.1 – Please indicate how was your firm's activity affected during 2010 – 2013 with respect to each of the following aspects?

	Strong decrease	Moderate decrease	Unchanged	Moderate increase	Strong increase
The level of demand	16.3	29.5	19.1	31.0	4.1
Volatility/uncertainty of demand	13.7	30.3	37.6	17.8	0.5
Access to external financing	8.0	13.2	67.9	10.2	0.7
Customers' ability to pay	26.1	29.2	35.9	8.6	0.2
Access to supplies from suppliers	1.8	21.7	59.0	14.3	3.2

Table C2 C2.2 – For those aspects, which affected your firm strongly, please specify whether you regard the effect to be only transitory, partly persistent or long-lasting for 2010-2013?

	Transitory	Only partly persistent	Long-lasting
The level of demand	4.2	24.5	71.3
Volatility/uncertainty of demand	1.4	21.2	77.4
Access to external financing	11.1	11.5	77.4
Customers' ability to pay	12.1	22.3	65.6
Access to supplies	54.2	11.4	34.3

Table C3 C2.3 – With regard to finance, please indicate for 2010 – 2013 the relevance for your firm of each one of the following happenings.

	Not relevant	Of little relevance	Relevant	Very relevant
Credit was not available to finance working capital	59.5	11.3	19.8	9.4
Credit was not available to finance new investment	51.7	19.9	20.3	8.0
Credit was not available to refinance debt	65.9	12.9	13.1	8.1
Credit was available to finance working capital, but conditions (interest rate and other contractual terms) were too onerous	48.7	10.8	27.1	13.4
Credit was available to finance new investment, but conditions (interest rate and other contractual terms) were too onerous	42.3	11.9	36.4	9.4
Credit was available to refinance debt, but conditions (interest rate and other contractual terms) were too onerous	55.2	14.0	19.9	10.9

Table C4 C2.4 – Please indicate how each one of the components of total costs listed below changed during 2010 – 2013?

	Strong decrease	Moderate decrease	Unchanged	Moderate increase	Strong increase
Total costs	6.0	22.0	12.9	52.0	7.2
Labour costs	6.0	20.6	25.2	46.5	1.8
Financing costs	3.3	13.9	33.5	37.6	11.7
Costs of supplies	3.2	15.7	35.9	42.0	3.2
Other costs	2.5	10.1	36.4	34.7	16.4

Table C5 C2.5 – Please indicate how each of the labour cost components below changed during 2010 – 2013.

	Strong decrease	Moderate decrease	Unchanged	Moderate increase	Strong increase
Base wages or piece work rates	5.4	18.1	38.1	37.0	1.4
Flexible wage components (bonuses, fringe benefits, etc.)	10.3	13.9	57.6	18.0	0.2
Number of permanent employees	9.5	32.5	25.0	24.5	8.5
Number of temporary/fixed term employees	10.6	14.1	44.2	26.8	4.3
Number of agency workers and others	8.0	3.5	82.2	6.0	0.4
Working hours per employee	0.3	3.7	89.1	6.9	0.0
Other components of labour costs	8.2	4.6	59.7	25.3	2.2

Table C6 C2.6 – How did prices and demand for your main product evolve during 2010 – 2013?

	Strong decrease	Moderate decrease	Unchanged	Moderate increase	Strong increase
Domestic demand for main product/service	14.8	34.1	32.2	17.6	1.3
Foreign demand for main product/service	9.6	14.8	47.6	24.6	3.4
Prices of your main product in domestic market	10.9	30.1	37.2	21.6	0.2
Prices of your main product in foreign markets	6.0	16.9	61.2	15.7	0.2

Table C7 C3.3b – At the moment when you needed most to significantly reduce your labour input or to alter its composition, which of the following measures did you use?

	Not at all	Marginally	Moderately	Strongly
Collective layoffs	67.4	14.2	15.2	3.2
Individual layoffs	14.3	38.0	41.1	6.7
Temporary layoffs	75.4	17.6	3.5	3.5
Subsidised reduction of working hours	83.7	13.9	2.4	0.0
Non-subsidised reduction of working hours (including reduction of overtime)	63.9	17.7	9.3	9.1
Non-renewal of temporary contracts at expiration	34.3	16.6	25.2	23.8
Early retirement schemes	57.0	9.0	21.9	12.1
Freeze or reduction of new hires	39.1	20.5	9.4	31.0
Reduction of agency workers and others	63.5	11.6	3.9	21.1

Table C8 C3.4 – Please indicate, in your view or your experience, whether each of the following actions has become more or less difficult, compared to the situation in 2010?

	Much less difficult	Less difficult	Unchanged	More difficult	Much more difficult
To lay off employees for economic reasons (collectively)	1.2	5.9	80.1	10.9	1.9
To lay off employees for economic reasons (individually)	1.6	10.5	73.8	12.0	2.2
To dismiss employees for disciplinary reasons	0.6	12.1	74.2	11.9	1.1
To lay off employees temporarily for economic reasons	0.2	10.6	77.1	11.1	0.9
To hire employees (cost of recruitment, including administrative costs)	3.0	19.0	62.0	14.0	1.0
To adjust working hours	4.0	11.0	72.0	13.0	1.0
To move employees to positions in other locations	2.0	12.0	80.0	5.0	1.0
To move employees across different job positions	0.0	15.0	72.0	11.0	1.0
To adjust wages of existing employees	0.0	12.0	69.0	15.0	4.0
To lower wages at which you hire new employees	3.0	12.0	70.0	11.0	4.0

Table C9 NC3.4b – Which factors caused changes you reported in C3.4?

	Reforms of labour laws	Enforcement of labour laws	Changes in trade unions behaviour	Changes in individual behaviour
To lay off employees for economic reasons (collectively)	50.0	6.0	23.0	20.0
To lay off employees for economic reasons (individually)	39.0	18.0	8.0	35.0
To dismiss employees for disciplinary reasons	22.0	46.0	4.0	28.0
To lay off employees temporarily for economic reasons	47.0	11.0	8.0	34.0
To hire employees (cost of recruitment, including administrative costs)	52.0	9.0	12.0	27.0
To adjust working hours	59.0	6.0	11.0	24.0
To move employees to positions in other locations	46.0	10.0	1.0	43.0
To move employees across different job positions	26.0	5.0	15.0	55.0
To adjust wages of existing employees	23.0	9.0	15.0	53.0
To lower wages at which you hire new employees	31.0	3.0	10.0	56.0

Table C10 C3.5 – How relevant are each of the following factors as obstacles in hiring workers with a permanent, open-ended contract?

	Not relevant	Of little relevance	Relevant	Very relevant
Uncertainty about economic conditions	12.0	11.0	34.0	43.0
Insufficient availability of employees with the required skills	21.0	21.0	38.0	21.0
Access to finance	28.0	24.0	38.0	10.0
Firing costs	22.0	19.0	38.0	21.0
Hiring costs	26.0	26.0	37.0	12.0
High payroll taxes	11.0	18.0	34.0	37.0
High wages	25.0	31.0	30.0	14.0
Risks that labour laws are changed	19.0	20.0	36.0	25.0
Costs of other inputs complementary to labour	20.0	18.0	45.0	17.0
Other	42.0	12.0	27.0	18.0

Table C11 CS3.6 – Do you consider it necessary in Croatia to have labour law reforms that would include the following changes?

	Strong decrease	Moderate decrease	Unchanged	Moderate increase	Strong increase
Firing costs	16.0	34.0	42.0	6.0	2.0
Hiring costs	18.0	33.0	40.0	6.0	3.0
Working hours flexibility	4.9	23.3	36.1	23.5	12.1
Costs of early retirement	6.9	29.5	44.5	11.8	7.3
Minimum wages	2.6	4.7	43.6	34.2	14.9
Costs arising out of collective agreements	14.0	25.2	47.3	11.3	2.3
Subsidy for the unemployed	9.4	8.3	54.3	24.3	3.8

Table C12 C4.1 – IN 2013: What percentage of your firm's total costs (all operating expenses) was due to labour costs (wages, salaries, bonuses, social security contributions, training, tax contributions, contributions to pension funds, etc.)?

	Average value of the share of labour costs in total costs
Total	38.7

Table C13 C4.2 – What percentage of your total wage bill in 2013 was related to individual or company performance related bonuses and benefits?

	Average value of the share of bonuses etc. in total wage bill
Total	4.5

Table C14 C4.3 – Did your firm apply collective pay agreements bargained and signed in 2013 within the firm (at the firm level) or outside the firm (at national, regional, sectoral or occupational level)?

	At the firm level	Outside the firm
No, such an agreement does not exist	61.1	76.0
No, the agreement exists but the firm opted-out	3.5	0.7
Yes, such an agreement is in effect	35.4	23.3

Table C15 C4.3b – What was the proportion of your employees covered in 2013 by any collective pay agreement?

	Proportion of employees covered by collective pay agreements, in %
Total	47.1

Table C16 C4.4 – How often does the collective pay agreement applied at you firm typically change?

	Frequency of change of the collective pay agreement
More than once a year	0.4
Once a year	17.5
Once between one and two years	3.1
Every two years	8.0
Less frequently than once every two years	22.7
Never/Not applicable	48.3

Table C17 C4.5 – Did your firm adapt changes in base wages to inflation before 2010? And during 2010 – 2013?

	Before 2010	During 2010 – 2013
Yes	42.4	33.9
No	15.3	16.8
Inflation was too low so that indexation rules were not operative.	42.3	49.3
There were no legal or other rules specifying such an adjustment.	0.0	0.0

Table C18 C4.6 – How frequently was the base wage of an employee belonging to the main occupational group in your firm typically changed in your firm?

	Frequency of changes in base wages	
	Before 2010	During 2010 – 2013
More than once a year	2.0	3.0
Once a year	33.9	35.4
Once between one and two years	9.9	7.7
Every two years	11.0	13.9
Less frequently than once every two years	23.7	20.5
Never/Not applicable	19.5	19.5

Table C19 C4.7 – Over 2010 – 2013, did you freeze or cut base wages in a given year (please indicate in which years)?

	Wage freeze		Wage cut		
	Share of firms that froze wages, in %	Workers affected, in %	Share of firms that cut wages, in %	Workers affected, in %	Average wage cut, in %
2010	12.7	91.0	7.4	76.4	16.7
2011	13.5	91.9	11.3	85.2	14.1
2012	14.1	92.7	14.0	83.3	12.0
2013	13.5	93.3	15.9	95.6	21.5

Table C20 CS 4.7a – How relevant is each of the following reasons in preventing base wage cuts?

	Not relevant	Of little relevance	Relevant	Very relevant	Don't know
Labour regulation/collective pay agreements prevent base wages from being cut.	29.6	15.1	28.8	18.9	7.6
It would reduce employees' efforts, resulting in less output and poorer service.	20.6	16.0	30.9	29.4	2.9
It would have a negative impact on employees' morale.	13.8	14.2	32.7	36.7	2.5
It would damage the firm's reputation as an employer, making it more difficult to hire workers in the future.	16.8	21.2	34.2	20.5	7.2
In presence of the wage cut the most productive employees might leave the firm.	10.3	9.0	38.2	40.3	2.2
A wage cut would increase the number of employees who quit, increasing the cost of hiring and training new workers.	17.1	24.2	34.0	22.4	2.3
It would create difficulties in attracting new workers.	17.9	18.8	35.9	24.1	3.4
Workers dislike unpredictable reductions in income. Therefore, workers and firms reach an implicit understanding that wages will neither fall in recessions nor rise in expansions.	22.1	15.4	40.8	14.8	7.0
Employees compare their wages to that of similarly qualified workers in other firms in the same market.	12.5	13.6	44.4	26.6	2.9

Table C21 CS 4.7.b – Is any of the following strategies applicable in your firm for the reduction of labour costs during 2010 – 2013?

	Share of firms, in %
Reduction or suspension of bonus payments	25.9
Reduction or suspension of fringe benefits	18.6
Changes in shift work	13.0
Slowing down or freezing the rate at which promotions are filled	11.6
Recruitment of new employees (with similar skills and experience) at a wage lower than the wage of those that have left	24.3
Using early retirement to replace employees with high wages by new employees with low wages	7.3

Table C22 CS4.7c – In relation to the main occupational group in your firm, please choose among the following options the one that is the most relevant factor in setting the entry wage for newly hired employees.

	Share of firms, in %
Collective pay agreement (signed at any level)	25.0
Wage of similar employees in the firm	43.0
Wage of similar employees outside the firm	7.0
Availability of workers with similar characteristics in the labour market	17.0

Table C23 NC4.8a – How did the labour cost of a newly hired worker compare with that of similar (in terms of experience and task assignment) workers at your firm?

	Before 2010	During 2010 – 2013
Much lower	2.0	1.0
Lower	6.9	11.0
Similar	76.8	66.0
Higher	12.9	20.0
Much higher	1.4	2.0

Table C24 CS4.9 – Did the wage cut in the public sector by 3% (based on the government decision from February 2013) have a direct or indirect impact on the average wage in your firm?

	Total
Yes, it helped us justify the wage cut in our firm.	7.0
Yes, it reduced the attractiveness of employment in the public sector.	2.0
No, it did not have any impact.	91.0

Table C25 NC5.2 – What share of the revenues generated by your firm's main products in 2013 was due to sales in the domestic market, and what share was due to sales in foreign markets?

	Average value
Domestic markets	74.4
Foreign markets	25.2

Table C26 NC5.4 – How would you characterise the degree of competition in the main markets (domestic and foreign) for your main product?

	Weak	Moderate	Severe	Very severe	Not applicable
Domestic markets	9.2	19.5	35.6	33.1	2.5
Foreign markets	6.5	15.3	18.2	22.2	37.9

Table C27 NC5.6 – In 2013, how and how often did you typically change the price of your main product?

	On a regular time pattern	Whenever costs/demand changed	Never
Price change frequency	15.7	60.6	23.7
Daily	1.8	0.7	
Weekly	1.0	3.1	
Monthly	0.5	4.9	
Quarterly	3.4	18.2	
Half-yearly	1.8	6.9	
Once a year	6.4	16.2	
Between one and two years	0.4	6.3	
Less frequently than once every two years	0.4	4.3	

Table C28 CS5.7 – What is the relation between the schedule of price change and the wage change?

	Share of firms, %
There is no connection.	57.4
There is a connection, but without a specific pattern.	31.0
Decisions are taken simultaneously.	2.7
Price changes follow wage changes.	4.9
Wage changes follow price changes.	2.3

Note: The presented results have been weighted by employment-adjusted weights.
Source: The WDN survey conducted by the HNB.

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