



New survey data on labour cost adjustments during the recent recovery in Slovakia

Peter Tóth, *Národná banka Slovenska*
 Katarína Valková, *Vienna University of Economics and Business*

INTRODUCTION

The aim of this paper is to summarise the key findings of a new survey of labour cost and price adjustment strategies by Slovak firms in the period 2010-2013 following the recent recession. The survey was conducted in the end of 2014 in cooperation with the Wage Dynamics Network (WDN).¹ This research network is operated by the consortium of EU central banks and is coordinated by the European Central Bank. The current wave of the survey is the third overall, while the National Bank of Slovakia is participated for the second time since 2009. A further goal of the article is to motivate future research based on this dataset² by providing a basic description of the available information. The qualitative data contained in this survey is a unique source of information that cannot be substituted with standard firm-level data. The additional value added of the current wave of the survey comes from studying labour cost and price adjustments during the recent recovery. This particular timing allows us to understand firm-level adjustments to aggregate shocks better.

INSTITUTIONAL CHARACTERISTICS OF THE SLOVAK LABOUR MARKET

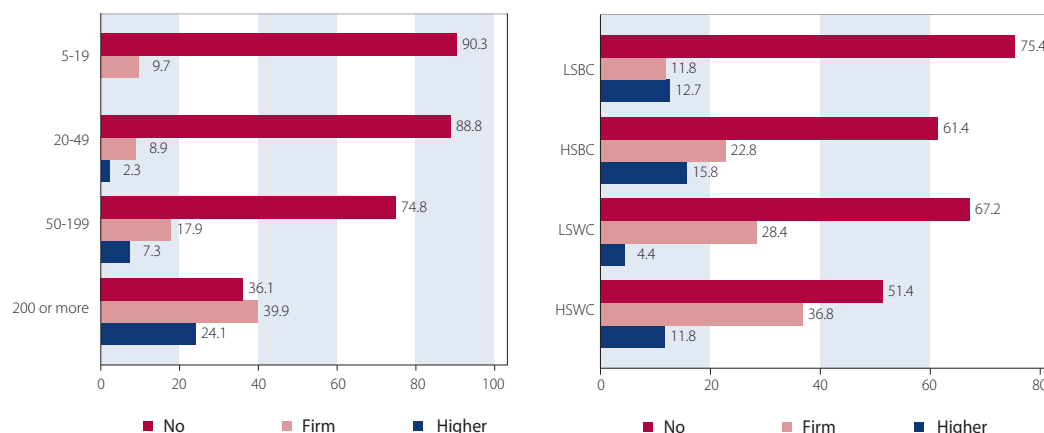
This section first describes the coverage of workers by collective agreements according to the survey dataset. In the second part, the main characteristics of labour market reforms during the surveyed period are summarised.

First, compared to the coverage of workers by collective agreements across European countries, Slovakia has a medium or low level of unionisation with a possible downward trend. Accordingly, the percentage of firms applying any kind of bargaining agreement has dropped to 37.5% compared to 57.4% in the last WDN survey wave (2009). The average percentage of employees covered by collective agreements in each firm amounts to 35.7%.³ The latter figure corresponds with the data reported by the European Observatory of Working Life⁴. The existence of a collective agreement as well as within firm union coverage are positively correlated with firm size (see Figure 1 and Table 1).

The level at which collective agreements are negotiated has a characteristic pattern depend-

- 1 More information on the WDN is available on the ECB webpage: https://www.ecb.europa.eu/pub/economic-research/research-networks/html/researcher_wdn.en.html
- 2 Empirical papers from the previous waves of this survey include BABECKÝ et al. (2012), BERTOLA et al. (2012), DRUANT et al. (2012) and GALUŠČÁK et al. (2012) using the pooled cross-country dataset. ČERVENÁ (2012a, 2012b) used the Slovak survey from 2009 only.
- 3 Union coverage varies between European countries from above 95% in Austria, France and Belgium, reaches percentages above 70% in Scandinavian countries, Denmark and Netherlands, to the lowest shares in the United Kingdom (29%), Poland (25%) and Lithuania (15%).
- 4 Detailed information available under: <http://www.eurofound.europa.eu/observatories/eurwork>.

Figure 1 Percentage of firms with collective agreement at firm level or higher (national, regional, sectoral, occupational) by firm size and by prevailing type of workforce (in %)

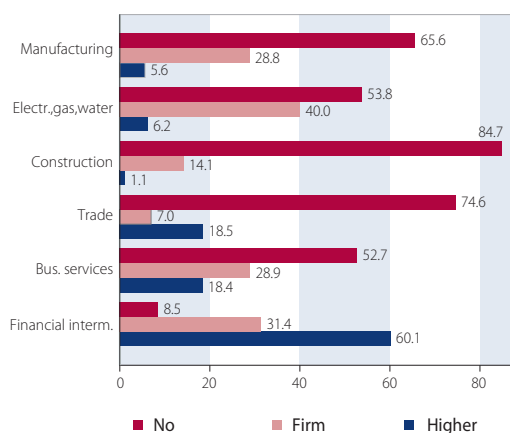


Source: Wage Dynamics Survey of the National Bank of Slovakia (2010-2013).
 LSBC – low-skilled blue collar, HSBC – high-skilled blue collar, LSWC – low-skilled white collar, HSWC – high-skilled white collar. Employment adjusted.



- 5 The EPL index for 2014 was still not available at the time of writing this material.
- 6 This is based on a country-specific question in the survey.
- 7 According to the statistics of the Ministry of Labour, the number of agreement workers in Slovakia dropped by 35.3%, while the number of employees expanded by 1.5% in 2013.

Figure 2 Percentage of firms with collective agreement at firm level or higher (national, regional, sectoral, occupational) by sector (in %)



Source: Wage Dynamics Survey of the National Bank of Slovakia (2010-2013).
Employment adjusted.

ing on the workforce structure of firms and the particular sector. Firm-level agreements are more typical for firms with a higher share of white collar workers (Figure 1), whereas higher level agreements are slightly more characteristic for firms with blue collar workers as the dominant workforce. In a sectoral breakdown, higher-level agreements apply in almost two thirds of the firms in the financial sector, while their occurrence in other sectors is below 20% (Figure 2). Firm-level agreements are most frequent in energy and manufacturing, where they apply in about every third company. The lowest share of firms participating in collective bargaining can be found in the construction sector, where the vast majority of firms does not apply any kind of collective agreements.

Next, adjustments during the surveyed period were also influenced by two essential law amend-

ments in the Slovak labour and tax law. The first reform in 2011 increased the labour market flexibility regarding dismissal rules in Slovakia. Correspondingly the OECD's Employment protection legislation (EPL) index decreased by 0.3 points to 1.94 points, which was significantly below the OECD average (2.24 points).

The second reform in 2013 aimed at reducing non-standard forms of employment, especially agreement workers, in favour of standard working relationships. Additionally, firing costs due to the extended rights to severance payments for some employees had increased and the renewal of fixed term contracts was restricted. These will probably lead to the increase of Slovakia's EPL index⁵. Agreement workers became also more integrated into the social security system, the new regulation of their working standards extended their rights, and their contracts have also become subject to the minimum wage. Thus it became costlier for firms to apply workers by agreement and their numbers dropped sharply as a result. Table 2 shows firms' adjustments due to all these legal changes based on the survey⁶. In particular 16.6% firms stated having cut the number of permanent employees, whereas 25.5% cut the number of agreement workers⁷.

DESCRIPTION OF THE SURVEY DATASET

Survey design

To collect the survey data, a sample of 7999 active private-sector enterprises with more than five employees was randomly selected from the Slovak Statistical Office's firm registry using stratified sampling. Firms were distributed into forty strata according to ten sectoral groups and four firm size categories (Table 3). Agriculture, education and public services were excluded. The National Bank of Slovakia contacted the sampled firms via traditional mail and e-mail in the end of November 2014. Respondents filled in the online questionnaire during

Table 1 Union coverage by firm size, workforce and sector

Total coverage: 37.49%					
Firm size		Prevailing type of workforce		Sector	
Size	Coverage	Workforce	Coverage	Sector	Coverage
5-19	7.7%	LSBC	19.9%	Manufacturing	33.8%
20-49	9.4%	HSBC	36.0%	Electr., gas, water	32.9%
50-199	26.4%	LSWC	32.8%	Construction	16.9%
>200	61.1%	HSWC	49.3%	Trade	20.2%
				Business services	46.5%
				Financial intermediaries	90.6%

Source: Wage Dynamics Survey of the National Bank of Slovakia (2010-2013).
LSBC – low-skilled blue collar, HSBC – high-skilled blue collar, LSWC – low-skilled white collar, HSWC – high-skilled white collar. Employment adjusted.


Table 2 Adjusting the number of employees and workers on agreement contracts due to legal changes

	Number of employees		Number of workers on agreement contracts	
	Frequency	%	Frequency	%
Did not adjust	484	79.0	426	70.7
Cut	102	16.6	154	25.5
Increased	27	4.4	23	3.8

Source: Wage Dynamics Survey of the National Bank of Slovakia (2010-2013). Employment adjusted.

December 2014 and January 2015. The final sample consisted of 621 companies with at least one respondent in each stratum. The overall response rate reached almost 8%, which was slightly below our expectations⁸. Notable differences in response rates across strata are observable. Namely, larger firms and some sectors were more likely to respond than others. The financial sector was most likely to cooperate and firms in industry also had an above average probability to respond. However, the quality of our results from this study will not be affected by these patterns, as employment weights account for non-response.

The questionnaire was organised in four sections. The first investigated changes in the economic environment, such as demand, credit and costs. The second section focused on adjustments in the labour input, the third dealt with wage adjustments and rigidities and the fourth was devoted to price adjustments. Although answering most of the questions did necessitate quantitative figures, the overall nature of the survey was qualitative. Respondents were typically asked to assess the direction of changes in various indicators or to

assess the relevance of certain factors on a discrete scale. Despite the categorical nature of responses and the subjective self-assessment character of the survey, the WDN dataset proves to be a unique source of information on firm-level adjustments.

Changes in the economic environment

Figure 3 depicts changes in the firms' economic environment, such as demand level, customers' ability to pay, access to external financing and the availability of supplies. Demand developments in the sample were largely heterogeneous both within and across sectors. This picture is broadly in line with macro-level data. Business services and construction were the worst hit sectors with more than half of the respondents reporting a fall in demand. On the opposite end of the spectrum were financial services, where the majority of firms benefited from a demand increase. The rest of the industries faced a more heterogeneous impact, meaning a more equal frequency of drops and hikes in demand.

A breakdown of demand shocks by firm size and workforce structure further revealed that small firms with less than fifty employees and

8 Our relatively low response rate stemmed partially from imprecise or outdated contact details in the official registry, as about 10% of letters and a larger fraction of e-mails were returned undelivered. Further, response rates of similar surveys tend to be higher if personal or phone contacts to potential respondents are also attempted. These options were however not undertaken due to the budget limitations of the project.

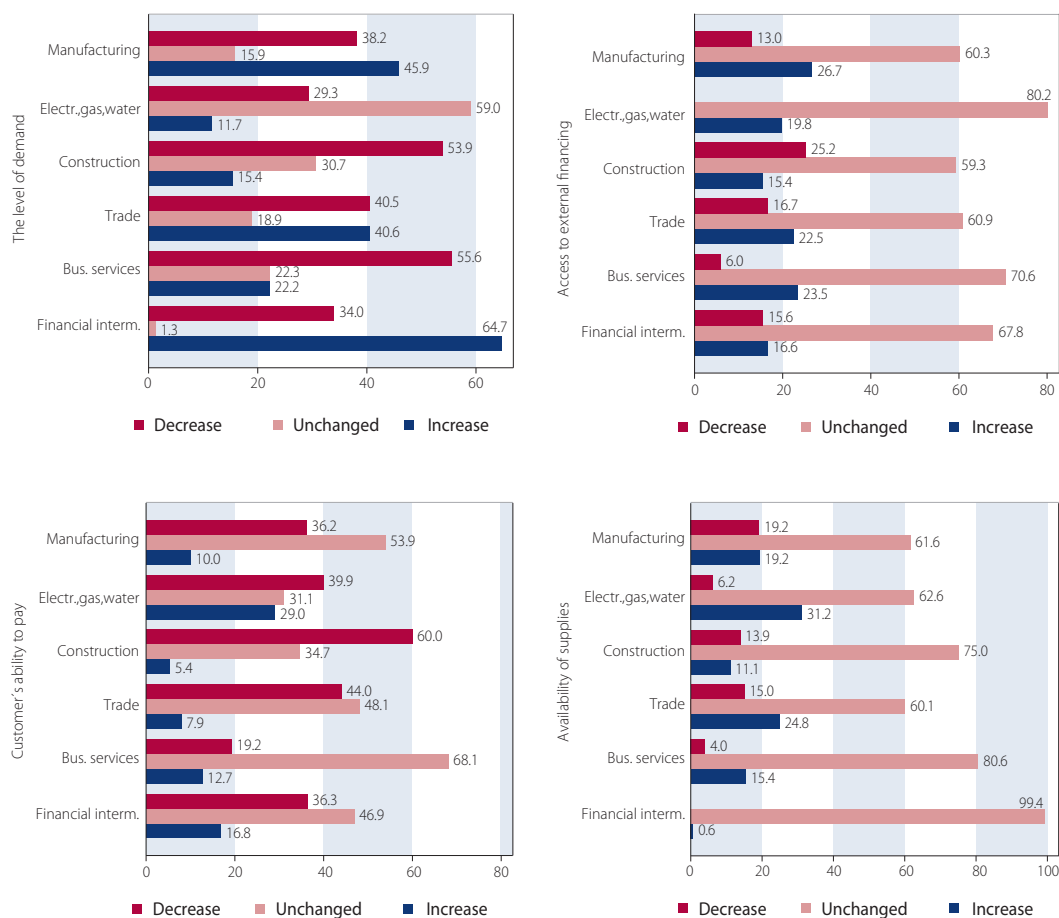
Table 3 Number of firms in the realised sample by sector and size

Sector	NACE 2	Number of employees				Total	Response rate
		5-19	20-49	50-199	≥ 200		
Food, beverages, tobacco	10-12	1	5	6	1	13	4.7%
Textile, wood, paper, printing	13-18	3	6	16	8	33	8.0%
Chemicals, plastics, metals	19-25	10	21	34	16	81	11.2%
Electron., machinery, equipm.	26-33	4	12	32	17	65	10.1%
Water and energy supply	35-39	3	2	7	5	17	11.1%
Construction	41-43	19	17	15	3	54	6.3%
Trade	45-47	49	39	30	11	129	5.9%
Transport, accommodation	49-56	16	24	21	7	68	6.5%
Other non-financial services	58-82	54	35	33	14	136	8.4%
Financial services	64-66	3	7	9	6	25	27.2%
Total		162	168	203	88	621	7.8%
Response rate		4.0%	9.1%	12.9%	15.4%	7.8%	

Source: Wage Dynamics Survey of the National Bank of Slovakia (2010-2013).



Figure 3 Changes in the economic environment during 2010-2013 (% of firms)



Source: Wage Dynamics Survey of the National Bank of Slovakia (2010-2013).
Employment adjusted.

9 Note that none of the respondents from the financial sector reported a strong increase in financing costs.
10 See GERTLER AND GILCHRIST (1994) and BERNANKE et al. (1994).

firms employing more white-collar workers were slightly more likely to experience a fall in demand. Next, patterns in customers' ability to pay were quite similar to demand developments. The highest frequency of adverse impacts was concentrated in the construction sector, while the median response elsewhere suggested no changes in customer solvency. Finally, access to external finance and the availability of supplies on average was not considered more problematic during the period 2010-2013 than before.

Figure 4 summarises the evolution of selling prices and non-labour related costs. First, selling prices on domestic markets reflect a mixed picture. Cuts were the most typical for financial intermediation, going hand in hand with an above average increase in competition (more under Wage adjustments below) and a below average increase in the cost of supplies in this sector (bottom right figure). In contrast, the majority of firms in energy and utilities raised their prices. Although prices in this sector are largely regulated, the outcome is consistent with increased costs of supplies prevailing in this sector. In the rest of the sample, the frequency of price cuts and increases are more balanced. Turning to the export market, selling prices can be characterised by much more stabil-

ity. This is to say that the median response is no change in all sectors. Albeit, a higher occurrence of dropping export prices in the export-oriented manufacturing sector is noticeable.

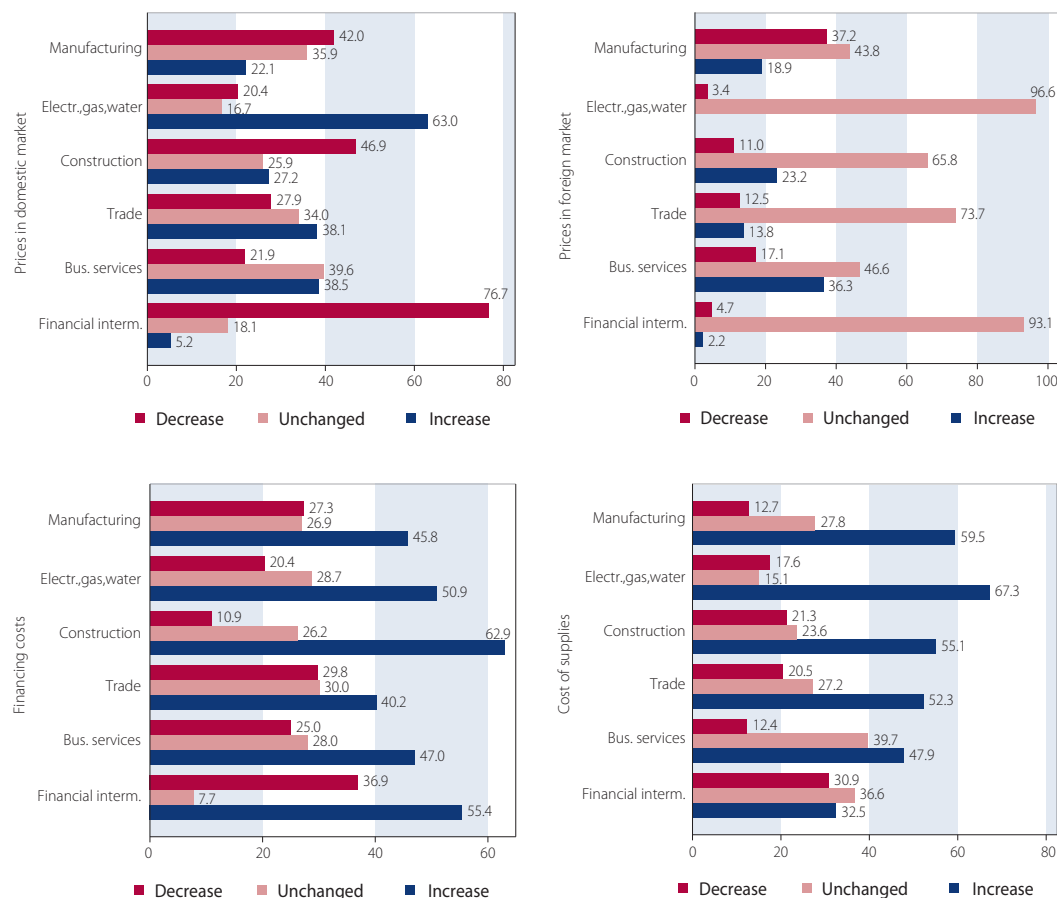
Second, increasing financing costs and costs of supplies dominated in most industries. Here the case of the financial sector was somewhat special. Whilst their supplies, i.e. financial liquidity, were cheaper thanks to monetary easing, stricter regulations may have moderately increased their financing costs⁹ during the surveyed period. Stricter regulations of financial intermediaries may have also caused the increased occurrence of rising financial costs for respondents in other industries. In this respect, a breakdown by firm size reveals that small firms were a bit more likely to face increased financial costs and also higher costs of supplies. The former result is in line with theories of flight to quality¹⁰, i.e. the preference of financial intermediaries to finance larger firms during economic downturns. And the latter finding is in line with the evolution of macro-level producer prices in the same period.

Wage adjustments

The comparison of alternative labour cost adjustment strategies in Figure 5 is broadly in accord-



Figure 4 Changes in prices of the main product/service and changes in costs during 2010-2013 (% of firms)



Source: Wage Dynamics Survey of the National Bank of Slovakia (2010-2013). Employment adjusted.

ance with the macro-level figures of employee compensations and employment. The increase of compensations in the sample was driven by base wages, while slightly more cuts occurred in flexible wage components. Looking at wage adjustments by firm size shows that large firms with more than 200 employees were more likely to increase wages and bonuses than their smaller competitors. This result is consistent with theories suggesting that large firms are more productive and thus pay higher wages.

As mentioned above, base wage cuts were a rare adjustment strategy in the post-crisis period in Slovakia. Indeed, only 1.5% of enterprises were cutting base wages (Table 4). Another question went further to investigate the reasons preventing base wage cuts. The most frequent answers were the fear of losing the most productive employees, reduced employees efforts and negative impact on their morale. Interestingly, state regulations preventing base wage cuts were not as important as one would typically expect. Only 45.9% of firms rated it as a relevant or very relevant concern, compared to 86.4% in case of the fear of losing the most productive employees.

Apart from wage adjustments, the survey also contains information on wage rigidities. First, in contrast to wage cuts, a slightly larger portion of firms (9.1%) reported having frozen wages some-time during the surveyed period. Wage freezes are often used as a proxy for downward nominal wage rigidities (e.g. Babecký *et al.* 2012). Interestingly, almost all reported wage cuts (eleven out of fourteen) were performed in combination with wage freezes.¹¹ This implies some limitations in the interpretability of wage freezes as downward wage rigidities in a very strict sense. Second, turning to real rigidities, base wages in Slovakia were quite frequently adapted to inflation, as 67.1% respondents admitted applying indexation rules. The presence of indexation rules is often treated as an indicator of downward real wage rigidity (Babecký *et al.* 2012). However, it should be interpreted with some care due to the binary character of this indicator in the survey.

Workforce adjustments

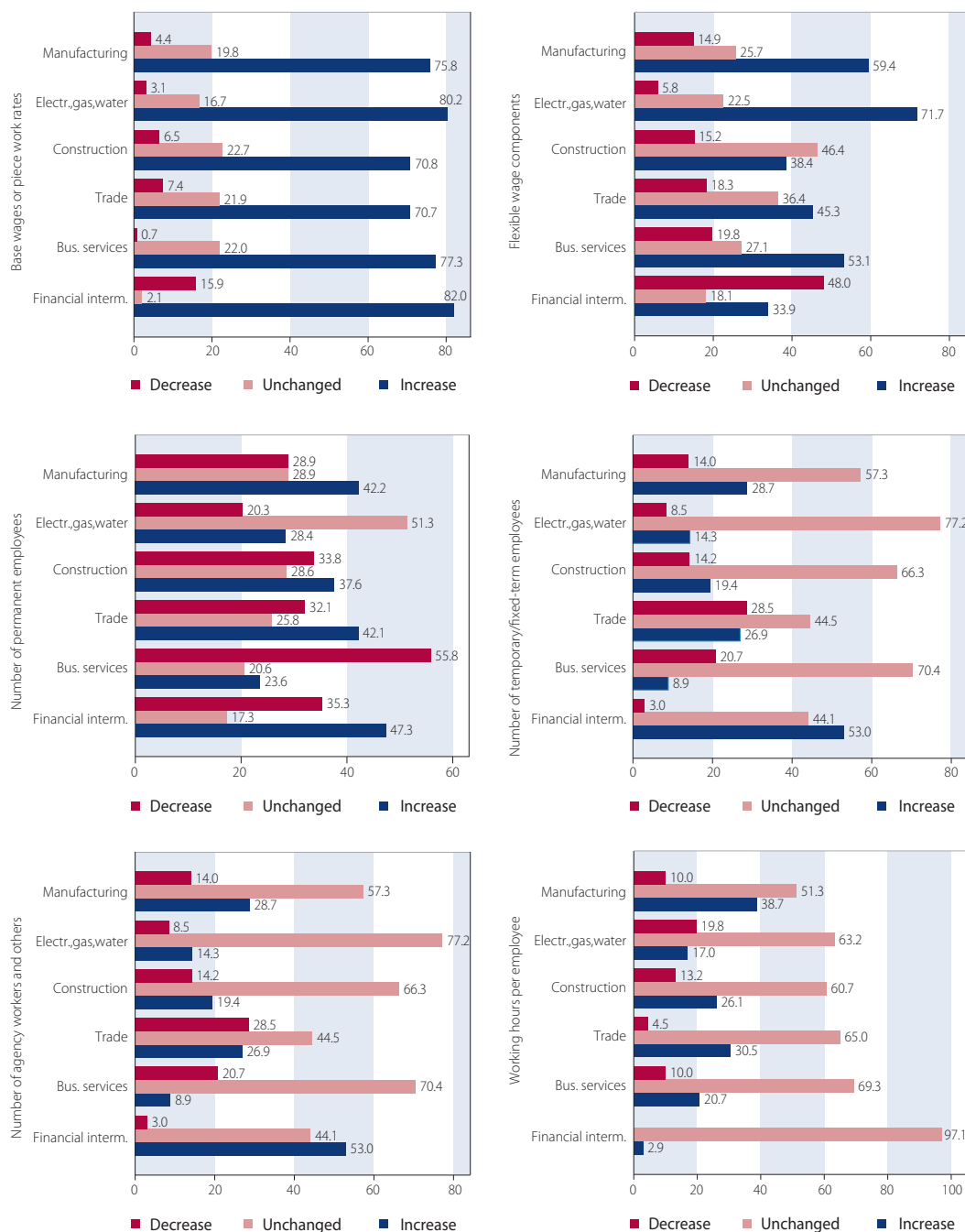
According to Figure 5, adjustments in the number of permanent employees seemed to be the most frequent strategy¹². In a sectoral breakdown, cuts and increases are more or less evenly distributed, though

11 This result is in line with evidence from previous waves of the WDN survey.

12 Individual layoffs, freezes or reduction of new hires were the most typically used strategies.



Figure 5 Labour cost adjustments during 2010-2013 (% of firms)



Source: Wage Dynamics Survey of the National Bank of Slovakia (2010-2013).
Employment adjusted.

Table 4 Base wage adjustments and reasons preventing base wage cuts

	Yes		No	
	Frequency	%	Frequency	%
Wages were cut	14	1.5	564	97.6
Wages were frozen	53	9.1	530	90.9
Indexation rules	398	67.1	195	32.9

Source: Wage Dynamics Survey of the National Bank of Slovakia (2010-2013).
Employment adjusted.



with a marked exception of payroll reductions as the median response in business services. A breakdown of the sample by firm size shows that close to half of the firms with more than 200 employees reduced their permanent employment, while only about 20% of the smallest firms with less than 20 workers did the same. This result is consistent with theories suggesting that large firms face lower hiring frictions, which allows them to lay off employees and eventually rehire them later at a lower cost compared to small firms.

Turning to more flexible margins of adjusting the labour input in Figure 5, there is little evidence that firms adjusted the number of temporary workers, agency workers or the working hours of employees extensively. This result is broadly based across firm size bins and most sectors, except financial intermediation. This is because the median financial firm increased its workforce, both in terms of permanent employment and other, more flexible forms of the labour input. The above developments in the financial sector are consistent with macro-level quantitative data.

Price adjustments

This subsection describes price-setting policies, price change frequencies and the development

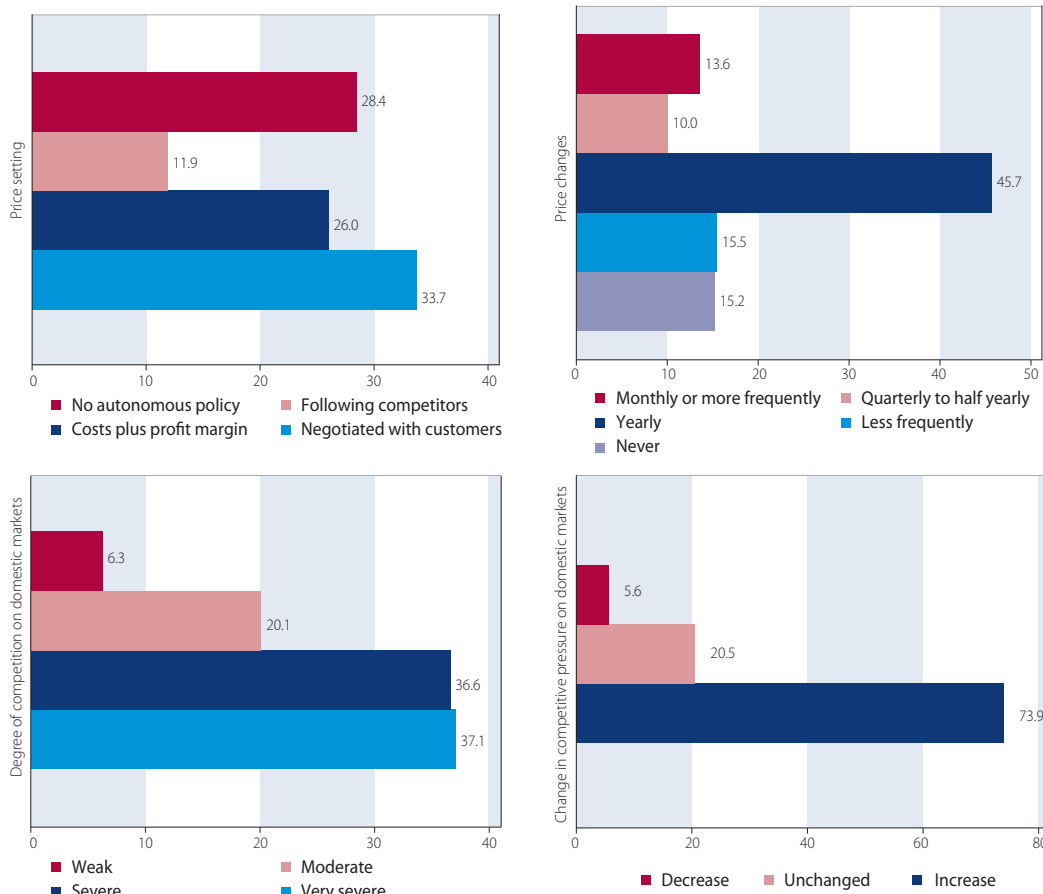
of competitive pressures according to the survey. First, Figure 6 shows that about a quarter of respondents reported having no autonomous price-setting policies in place. This answer was relatively more frequent among the largest firms and in the financial and energy sectors. This may be due to the specific character of financial products or the presence of regulated prices. The median firm in the sample tends to negotiate its prices with individual customers. This suggests the dominance of industries with differentiated products, specialized customers and the possibility of monopolistic markups. Just a quarter of respondents sets prices to costs augmented by a fixed margin. Finally, a small minority of firms simply adjusts prices according to competitors.

Second, regarding the frequency of price changes, almost half of the sample adapts prices on an annual basis. This roughly corresponds to the sample frequency of changing base wages. However, the fraction of firms that change prices more often than yearly¹³ (about a quarter of the sample) is much larger than the share of respondents reporting base wage changes more than once a year (only 3% of firms). This result is in line with previous findings that nominal wages are more rigid than prices¹⁴. Third, almost

13 Price changes more than once a year are concentrated in the construction and trade sectors.

14 See e.g. DRUANT et al. (2012), who use data from the previous wave of the WDN survey.

Figure 6 Price setting rules and competition during 2010-2013 (% of firms)



Source: Wage Dynamics Survey of the National Bank of Slovakia (2010-2013). Employment adjusted.

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three quarters of the sample encountered severe competitive pressures on domestic markets, which even intensified during the recovery years. The situation with competition on foreign markets was much the same. In a firm size breakdown, the pressures were slightly less tight for the largest firms with more than 200 employees compared to smaller firms. While the highest degree of competition is reported in the construction and trade sectors.

CONCLUSION

The main findings of the latest WDN survey in Slovakia were broadly in line with macroeconomic data, which suggests the reliability of this survey dataset for further analysis. This concerns especially the developments of the main indicators, as the uneven recovery of demand across sectors, the stagnation of employment and the increase of wages. Considering prices, the increased competitive pressures following the demand shock led to a weak recovery of selling prices. This happened despite the rising costs of external finance and supplies.

The detailed qualitative information contained in the survey dataset allows us to make further insights into the adjustment processes following the crisis. First, the coverage of Slovak workers by collective agreements is at a medium to low level compared to the rest of Europe and such agreements are more concentrated among large firms. Second, downward nominal wage rigidities in the form of wage freezes were rather infrequent. While the application of inflation indexation rules in wage setting, often referred to as downward real wage rigidities, is quite widespread in Slovakia. However, the most important factor preventing wage cuts is the fear of losing the most productive workers and worsening worker morale. Third, most of the layoffs and wage increases took place at large firms. These are typically more productive, pay higher wages and face lower costs of adjusting their labour input. To sum up, the presence of unions, downward wage rigidities and the leading role of large firms seem to be the main explanation for the particular labour market response to the crisis in Slovakia.

I N F O R M Á C I E

Ponuka podujatí Inštitútu bankového vzdelávania NBS, n. o., na november 2015



Názov vzdelávacieho podujatia	Dátum konania
Regulácia FMI – 24 základných princípov	2. 11. 2015
Brain Leaders – intenzívny neurotréning na rozvoj koncentrácie pozornosti a pamäti (A)	3. 11. 2015
Zabezpečovanie pohľadávok v obchodných vzťahoch	4. 11. 2015
Platobný styk – nové prvky a účastníci platobného styku	5. 11. 2015
Funds Transfer Pricing – oíceňovanie likvidity	9. 11. 2015
Riadenie bezpečnostných rizík vo finančných inštitúciách	10. 11. 2015
Retailové deriváty	10. 11. 2015
Finančná analýza firmy	12. – 13. 11. 2015
Školenie pre používateľov IS SEPA SIPS	12. 11. 2015
Vplyv legislatívnych zmien na čítanie účtovných výkazov	12. – 13. 11. 2015
Stratégia boja proti legalizácii príjmov z trestnej činnosti	13. 11. 2015
ABC pre banky a poisťovne	18. 11. 2015
Spotrebiteľské právo v bankovej aplikačnej praxi	19. 11. 2015
Compliance	19. 11. 2015
Osobitné finančné vzdelávanie – základný, stredný a vyšší stupeň – sektor poisťovníctva a zaistenie	22. – 23. 11. 2015
Platobný styk v SEPA priestore (SEPA SCT, SEPA SDD a TARGET2)	24. 11. 2015
Brain Leaders – intenzívny neurotréning na rozvoj koncentrácie pozornosti a pamäti (B)	24. 11. 2015
Finančná matematika	24. – 25. 11. 2015
Stresové scenáre a stresové testovanie	25. 11. 2015
Školenie ICM TARGET 2	25. 11. 2015
Ako minimalizovať riziko pri výbere zamestnanca so sklonmi k fraudovému a podvodnému správaniu vo finančnom sektore	26. 11. 2015
Súčasná regulácia bánk – Basel III	26. – 27. 11. 2015
Osobitné finančné vzdelávanie – základný, stredný a vyšší stupeň – sektor úvery	25. – 26. 11. 2015
Riadenie finančných rizík	26. – 27. 11. 2015
BRRD	30. 11. 2015