

NBP Working Paper No. 233

Poland's labour market adjustment in times of economic slowdown – WDN3 survey results

Paweł Strzelecki, Robert Wyszynski



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Paweł Strzelecki – Narodowy Bank Polski and Warsaw School of Economics;
pawel.strzelecki@nbp.pl

Robert Wyszynski – Narodowy Bank Polski; robert.wyszynski@nbp.pl

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Abstract

This paper presents the results of a survey carried out in Poland in 2014 among nearly 1500 firms, within the framework of the ECB's Wage Dynamics Network (WDN). It aims at assessing the impact of the global economic and financial crisis on firms' business activity, as well as analysing the way the labour market adjusted to the slowdown and the role institutional reforms played at that time.

According to our analysis, the absence of real recession, together with a rapid response of wages at the beginning of the slowdown translated into a relatively mild reduction of employment and a moderate unemployment increase. The shocks in 2009 and 2012 were comparable in terms of their scale. In both cases a drop in demand gradually spilled over to lower customers' ability to pay and to higher uncertainty. However, the shocks hit completely different parts of the economy. While the first shock was observed mainly in export-driven enterprises (industry), the second one was observed mostly in domestic market oriented companies (construction). Moreover, firms in Poland did not experience any additional, major credit constraints during the global financial crisis.

The results confirm a relatively high real and nominal wage flexibility and a limited impact of labour market reforms in the period 2009-2013.

JEL: J23, J30, J32, L11, C81

Keywords: labour demand, price setting, economic crisis, labour cost adjustment, wage flexibility, enterprise survey

1. Introduction

Business surveys are widely used by central banks to assess the macroeconomic situation and its main determinants¹. However, enterprise surveys can also be used to verify the adequacy of labour market theories at the micro level (Bewley, 1999). The answers given by firms can also be perceived as a source of direct knowledge about their reactions to changing economic conditions or new regulations.

The survey presented in this paper is the follow up to the Eurosystem/ESCB Wage Dynamics Network project (WDN) carried out already twice, in the years 2006-2008 and 2008-2009 (European Central Bank, 2010). As part of the initial edition of that project a standardized survey among companies was conducted by 17 national central banks in 2007/2008. In Poland the first WDN survey (WDN1) was carried out in November and December 2007 and produced a database with approx. 1200 observations (Strzelecki, 2008). Its purpose was to identify the specific structural factors of the national labour markets in the EU (institutions, labour code regulations, indexation etc.) and the practical behaviour of employers in reaction to some hypothetical shocks). The second round of the survey, conducted in May 2009 (WDN2), focused on consequences of the recent economic and financial crisis for the real economy, which triggered, as in the case of Poland, a rapid labour market adjustment.

Since 2009 large differences have been observed in the pace of economic recovery between EU member states, which was reflected in a high variability of the GDP growth rate as well as labour market conditions. Some countries recovered relatively fast, but in many EU countries the effects of the financial and economic crisis are still being felt. What is also important, the crisis provided an additional stimulus to labour market reforms in European countries. The aim of the current

¹ More details of different business surveys carried out by central banks can be found at: <https://www.frbatlanta.org/research/surveys/central-bank-business-database.aspx>.

survey (WDN3) was, firstly, to collect retrospective data about the firms' reaction to the economic slowdown in the years following the Great Recession. The current survey consists of five parts: general information about the firm, changes in its economic environment, employment adjustments, wage adjustments, as well as price setting and price adjustment (the full questionnaire of the Polish WDN survey can be found in Annex 1). The data from the WDN survey are expected to shed some light on the determinants of the firms' behaviour during the crisis. Secondly, the survey also collects data on the employers' assessment of the effects of labour market reforms introduced in many EU countries.

This paper is organised as follows. Chapter 2 contains a short description of the macroeconomic context of the survey analysis and the description of the main labour market reforms introduced in the years 2008-2013. Then, in chapter 3 the methodology of the Polish part of the international WDN survey is presented. The survey was designed specifically to verify the hypothesis regarding the timing and nature of the shocks perceived by companies. Chapter 4 presents the main results of the survey, shedding some light on the nature of the shocks, companies' response to those shocks and the key determinants of their behaviour. Chapter 5 concludes.

2. The macroeconomics of adjustment & labour market reforms

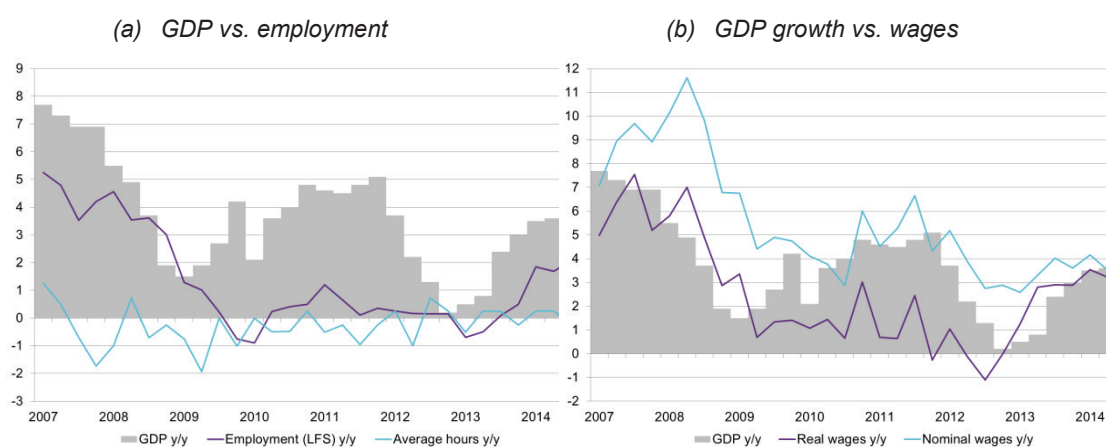
There have been different patterns of behaviour of EU economies since the beginning of the global financial and economic crisis. The period 2008-2009 can be defined as the beginning of the crisis. During that period crisis affected almost all countries. The core part of WDN3 survey refers to the years 2010-2013. In some countries it was as a post-crisis period. However in many other countries it did not mean a stable recovery, but the second wave of slowdown or even depression. The W-pattern of economic growth was also observed in Poland. The two minimums were observed in 2009Q1 (1.5% y/y) and in 2012Q4 (0.5% y/y). However, the extent of financial and economic crisis in Poland was limited in comparison to other EU countries. After a sharp drop from more than 7% y/y in 2007 GDP growth remained positive and recovered relatively fast in the second half of 2009 (Figure 1). However, the changes in the labour market were more pronounced. After a period of accelerating growth, wages adjusted almost immediately from double-digit growth in 2008 to less than 5% in 2009. The adjustment of real wage growth was also rapid, from about 7% y/y in the second quarter of 2008 to less than 1% y/y in the second quarter of 2009. In contrast to the previous recession in Poland, employment growth dropped off slowly, with clear signs of labour hoarding (Strzelecki et al., 2009) and relatively significant adjustment of working hours.

The immediate reaction to the crisis was a significant if not dramatic drop in vacancies². The number of lay-offs increased gradually³ and reached a peak in the

² According to the Labour Offices the number of vacancies in 2009Q1 dropped by 26% compared to 2008Q1 (close to the peak of the boom). However, according to the survey "Demand for Labour in Poland" conducted by the GUS (Polish Central Statistical Office) (GUS, 2010, 2009), providing more information about the offers for more skilled workers, a decrease in the number of job vacancies reached in fact 60% because many vacancies not

first quarter of 2010, which was reflected in a decreasing number of employees (see employment (LFS) y/y in Figure 1). However, the decline in employment was observed only in the last quarter of 2009 and the first quarter of 2010, while during the 1999-2003 recession, falling employment was observed for 17 quarters in a row. The next two years (2011-2012) were a period of a growth close to the potential (4-5% y/y), however with a relatively slack labour market – employment increased slowly, nominal wage growth was stable, but real wage growth was on a downward trend and in fact turned negative in 2012. 2012Q1-2013Q2 marked the period with the lowest GDP growth since 2008. This type of labour market adjustment was similar to the one observed in 2009 and involved a reduction in the nominal wage growth to about 3% y/y and two quarters of falling employment. A decrease of the inflation rate below 1% contributed to a faster recovery of real wages after they hit a low in 2012Q4.

Figure 1. GDP growth and labour market adjustment in the Polish economy in the period 2007-2014



Source: LFS, GUS, own calculations

filled in the period of economic upturn (2007-2008) have been immediately withdrawn from the labour market at the beginning of the crisis.

³ See (NBP, 2014a, page 15) for the complete history of probabilities of transitions between employment and unemployment calculated for the Polish economy on the basis of the LFS panel data.

In order to ensure the cross-country comparability in the WDN3, survey questions were asked separately about the global financial crisis period (2008-2009) and about the the post-crisis period (years 2010-2013). In fact, while a deeper decline in GDP growth was observed in the latter period, labour market consequences of both slowdowns were similar. Despite the volatile GDP growth, unemployment rate did not decrease substantially in the period of faster growth in 2011. In fact, the first significant decline in unemployment after 2009 was not observed until 2013 (Figure 2) and by that year the unemployment rate increased steadily from about 7% to nearly 11%. The reason for that was the rising labour supply due to the upward trend in labour force participation. This trend can be, to some extent, explained by the early retirement reform,⁴ introduced at the beginning of 2009.

In order to better explain WDN 2014 results, it should be mentioned that the first wave of the slowdown affected mainly manufacturing, while construction suffered most during its second wave. The collapse in the construction sector in 2012-2013 can be attributed to low demand for infrastructure projects and stricter regulations regarding mortgage credit (Augustyniak et al., 2013; NBP, 2014b). The role of exchange rate fluctuations in the adjustment process is an additional relevant element that needs to be addressed while describing the consequences of the crisis. In the period 2008-2009, a rapid depreciation of PLN against EUR was observed (Figure 3), after some years of an appreciative trend. However, after the EUR/PLN exchange rate stabilized at the level slightly above 4, further changes were rather small. It should be mentioned that according to an NBP survey of enterprises (NBP, 2014c, page 14) the reported average threshold exchange rate of exports profitability declared by enterprises was close to the observed exchange rate, while at the beginning of 2009 the exchange rate was 20% above this average breakeven point and remained 10% above it in the next years.

⁴ See Annex 2 for more information.

Figure 2. Unemployment rate and labour force participation rate

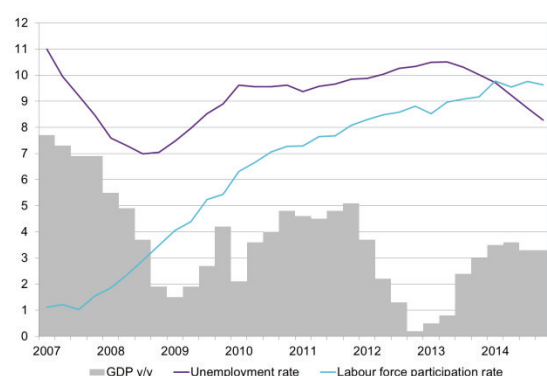
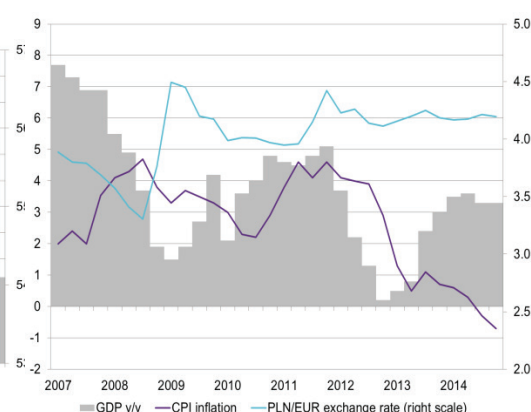


Figure 3. Inflation and EUR/PLN exchange rate



Source: LFS, GUS, own calculations

Even before the economic crisis Poland was a country with relatively flexible labour market institutions (Caju et al., 2008; Strzelecki, 2008). There were no major reforms that could have significantly changed this situation since then. The trade union participation continues to be marginal and the unions' influence on the companies' decisions remains limited because wage negotiations are individualized almost in all sectors. What is also important, the wage indexation mechanisms, in particular automatic ones, are used by the companies sporadically. Another important feature of the Polish labour market is the highest share of fixed-term contracts in the EU, especially among less skilled workers (OECD, 2014). The share of temporary contracts (including civil law contracts) was on an upward trend since the early 2000s, and since 2006 it has been fluctuating between 25% and 30%.

A detailed description of labour market reforms introduced in the years 2008-2013 may be helpful in explaining the answers given in the survey by the entrepreneurs and was presented in the Annex 2. It is worth mentioning that just before the crisis the tax wedge was significantly decreased due to a reduction in the disability

insurance contributions.⁵ During the crisis, deteriorating fiscal conditions forced the government to reverse this reform. The reforms introduced as a direct reaction to the crisis were mainly launched in August 2009 within the so called ‘anti-crisis package’. The measures related directly to the crisis targeted companies and unemployed persons (MPiPS, 2012). By and by it appeared that majority of the reforms had a limited take-up (Jungman, 2011) especially regarding direct financial help to enterprises. According to WDN 2014 the open limit for the number of new fixed-term contracts was the most frequently used part of “anti-crisis package” introduced for 24 months starting in August 2009 but did not halt, in any significant way, further increase of the share of persons that worked on fixed-term contracts.⁶ Another measure – longer reference working time period, which allowed employers to better fit working hours to demand for products was used to a lesser extent and only in big companies. Other changes didn’t have a significant influence on the labour market. Almost 3/4 of employers admitted that there had been no need to apply any of the proposed measures, which seems to be due to the relatively strict formal requirements and a relatively good situation of the enterprise sector in Poland at that time.

Some important changes in the regulations affected the labour market and could have influenced the answers but were not connected directly to the crisis. For example important pension reforms⁷ were introduced in the period 2008-2013 and probably contributed to an increase of labour supply in this period. There were also

⁵ For more information regarding the influence of this reform on the tax wedge of employees with different wages see (Morawski and Myck, 2008).

⁶ The significant increase in fixed-term employment was observed between 2000 (approx. 6% of fixed-term contracts) and 2006 (the share reached 28%). Since then the share stabilised.

⁷ Information about reforms that may have influenced the labour market in the period 2008-2013 is included in Annex 2. More about the changes in pension reforms can be found in the supplement to the European Commission’s Working Group on Ageing report (Ministerstwo Finansów, 2014).

some changes that affected unemployed persons, such as the decrease in the amount of unemployment benefits introduced in 2010 and reduction of expenditure on active labour market policies (ALMP) in 2011 and 2012. These changes could also have been noticed by employers and could have been taken into consideration in the assessment of the reforms.

3. Survey methodology

The Polish WDN 2014 survey was carried out from February to May 2014 and was based on the commonly agreed WDN questionnaire⁸ (see Annex 1). In addition to the core WDN questions, the Polish questionnaire contained the same questions about two sub-periods of the economic crisis: the core period 2010-2013 and the non-core period 2008-2009. Additionally questionnaire contained also points about country specific problems like (NC 5.2) percent of transactions settled in currencies different than PLN (mainly Euro) and questions about the role of the exchange rate in price fluctuations (NC 5.3a and NC 5.3b).

The fieldwork of the WDN survey carried was done by the representatives of Narodowy Bank Polski in local branches. The same method was also used in the previous two waves in 2007 and in 2009⁹. Firms filled out the paper questionnaires or their electronic versions. The target population were the firms from the following sectors¹⁰: manufacturing (code C), electricity, gas and water supply (D and E), construction (F), wholesale and retail trade (G), transportation and storage (H), accommodation and food service activities (I), information and communication (J), real estate activities (L), professional, scientific and technical activities (M), and administrative and support service activities (N). There was no initial limitation regarding the minimum size of the firm as in many small companies the definition of employment is quite fuzzy due to a significant share of cooperation with self-employed persons and civil law contracts.

⁸ The main difference between the Polish questionnaire and the final WDN questionnaire is the absence of question C 2.5, which was finally added in WDN questionnaire after the start of the survey in Poland.

⁹ It should be mentioned here that the current survey and that carried out in 2007 consisted only of WDN questionnaire while the questions asked in 2009 were a part of the bigger NBP survey of enterprises.

¹⁰ According to NACE 2 classification.

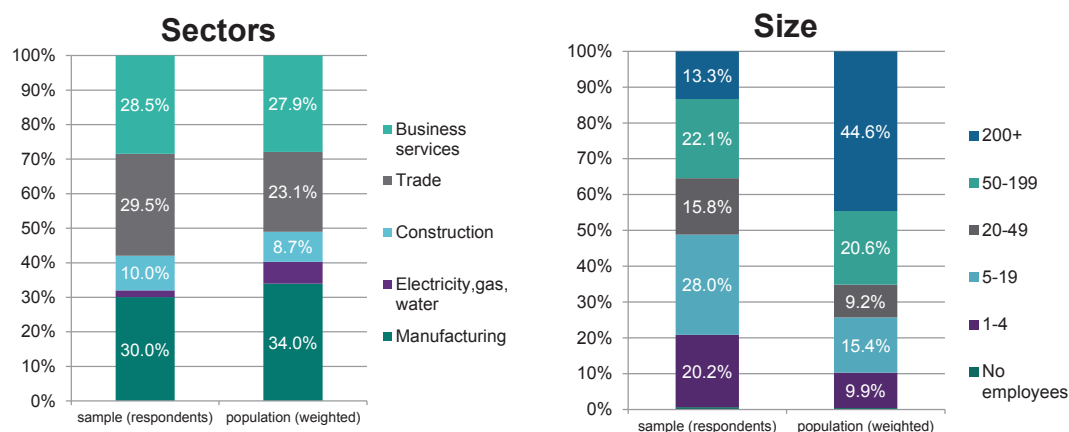
The sample selection was based on stratified sampling in order to ensure the coverage of the main sectors, firm size and regions of the country. The proportions of the companies in the initial sample was a compromise between the number of firms in each strata and the size of each strata in terms of employment. The non-random element of the sampling process was the priority to interview the companies surveyed in the years 2007 and 2009. The initial sample consisted of 4304 firms. The final number of completed surveys in the targeted sectors¹¹ amounted to 1465, out of which 1173 surveys were conducted in the companies that employed 5 persons or more. The response rate stood at about 34% and was relatively high considering the length of the questionnaire. The response rate increased due to personal contacts of NBP representatives with companies, extension of the period in which the companies could return their completed questionnaires, as well as reminders sent to them in that period. The 2014 sample also included some firms which had taken part in WDN survey already in 2007 and 2009, so their previous and recent answers could be easily compared.

The final survey sample is biased in comparison to the structure of the companies in the whole population (Figure 4). In general, the sample was biased towards the overrepresentation of companies from the 'Trade' section while the sections: 'Manufacturing' and 'Electricity, gas and water supply' were underrepresented. In comparison to the population this sample is also characterized by an overrepresentation of small companies. In order to solve that problem, sampling weights were used in the calculations (see Annex 3 for a detailed comparison of the number of firms and employment by strata in the sample and in the population). The method of calculation is common for the WDN surveys (see Babecký et al. (2009), Appendix 3, for more details). The proportions of the number of firms and

¹¹ The total number of the completed surveys amounted to 1530, but some of them were conducted in sectors other than targeted ones.

employment in strata was calculated from the publications of the Polish Central Statistical Office (GUS, 2014a, 2015)

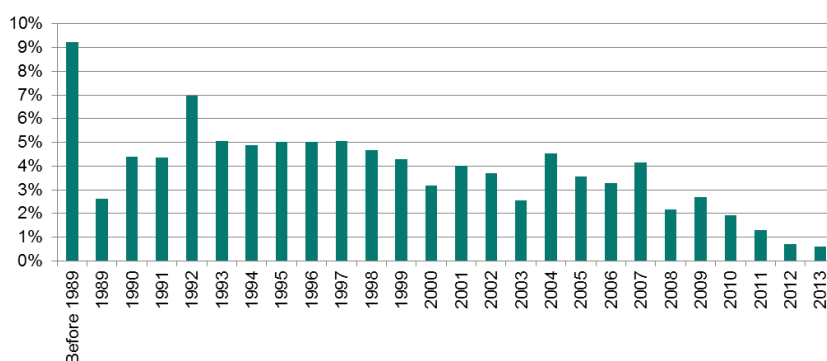
Figure 4. Sample composition and population composition .



Source: WDN2014, GUS, own calculations

The majority of the firms in the sample (90.6%) were established before 2008 (Figure 5), so they were able to answer the questions about both periods 2008-2009 and 2010-2013. The other 4.9% were the companies established in the years 2008-2009 that answered the questions about the full changes only for the period 2010-2013. The managers from the remaining companies gave the answers referring to their experiences since 2010.

Figure 5. Sample composition – first year of operating



The majority of companies consisted of only one establishment (Figure 6) but in all the main sectors at least 10% of companies had a more complicated structure. In manufacturing even 20% of companies operated in more than one industry. About 23% of the companies in the sample were foreign-owned companies¹². Most of those firms were not independent but were subsidiaries or affiliates of foreign parent companies (Figure 7). Domestic capital companies consisted 76% of the total sample and majority of them (71% of the sample) were the parent companies, independent in their decisions.

Figure 6. Sample composition – corporate structure

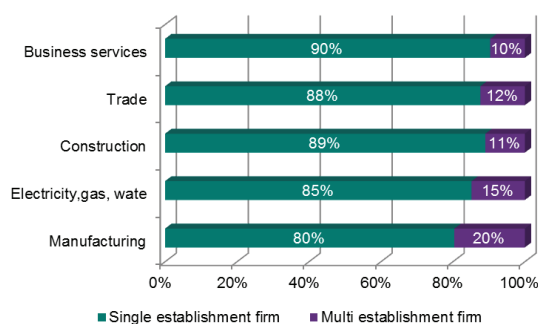
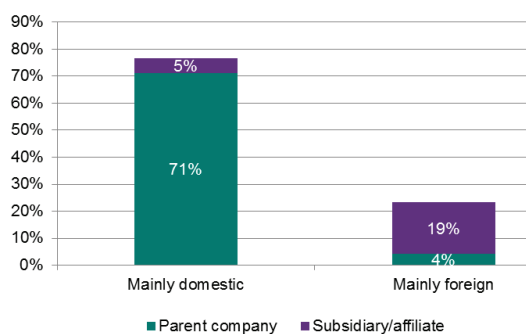


Figure 7. Sample composition - ownership and independence in decisions (both bars sum up to 100%)



¹² According to the GUS the companies with foreign capital constituted in 2013 about 1.5% of the total number of companies in Poland but employed about 18.3% of the total number of workers in the economy (GUS, 2014b, 2015)

4. Survey results

WDN3 was aimed, in the first place, at identifying sources of shocks companies had to face during the periods 2008-2009 and 2010-2013, and then at assessing their impact on the firms' business activity, as well as analysing the way the adjustment took place. Special attention was given to wage, employment and pricing decisions. This part presents WDN3 results for Poland and has been divided into five sections, describing: the sources and magnitude of the shocks, a dominant way of adjustment including any relevant trade-offs, changes in wage setting, obstacles in hiring new workers, and finally changes in price setting patterns.

a. Sources and size of shocks

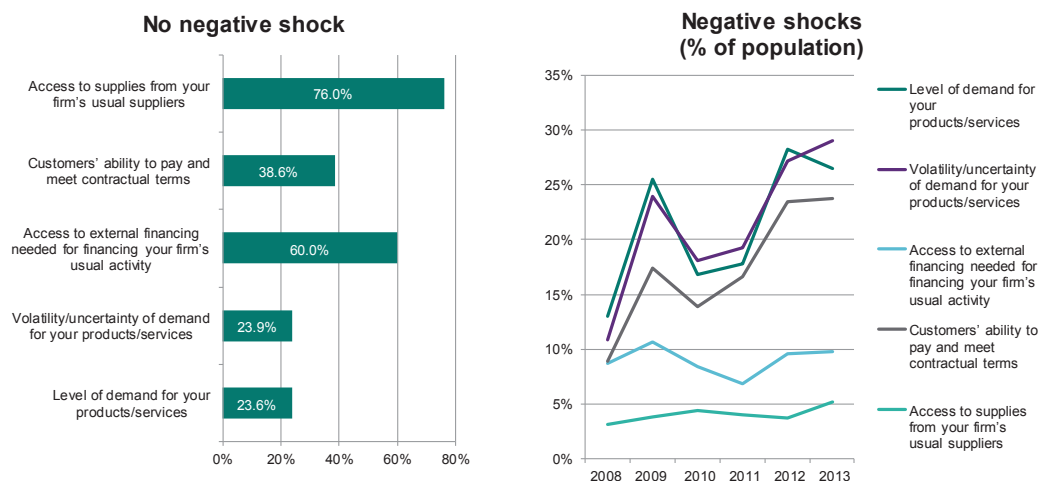
Both referring to the most recent period and with regard to the earlier one there are three main factors to be mentioned as main sources of negative shocks in the case of Poland:

- declining customers' ability to pay and meet contractual terms,
- drop in the level of demand for product/services, and, to a lesser extent,
- a higher volatility and uncertainty of demand.

It appears that the shock in the years 2010-2013 was, in general terms, relatively weaker as compared to 2008-2009 (Figure 9). However, the period 2010-2013 was also much more heterogeneous both with regard to the year-by-year impact of these factors and the distribution of responses within the sample. While at the beginning of this period the above shock types influenced enterprises' business activity rather moderately, in 2012 and 2013 the companies had already absorbed a much stronger negative impulse from the demand side than in 2008-2009. The percentage of firms that experienced the shock amounted to 28% (Figure 8). Although on average, during 2010-2013 there were more companies who had started to recover than in the previous sub-period (Table 1), the uncertainty concerning the demand for their products at the end of this period increased

further. The variance of responses concerning changes in demand level also rose compared to the previous sub-period. More respondents reported rising demand (over 46% vs. 33% in the years 2008-2009). However the share of firms experiencing a drop in demand for their products remained at a practically unchanged and fairly high level (33% vs. 34%). The relatively weakest impulse observed by firms came from their usual suppliers. 76% of the enterprises had experienced no supply shock since 2008. About 60% didn't notice any shock due to a more difficult access to external financing, either. Moreover, the scale of those two types of shocks didn't vary as much over the years as in the case of the demand shock.

Figure 8. NC2.9 Has the firm experienced NEGATIVE shocks (five types of shocks)? If yes, in which years did the most significant negative shock take place?*



* While the left panel illustrates the percentage of firms with no experience of any negative shock, the right one shows, for each year of observation, the percentage of firms affected by negative shocks.

Table 1. Factors affecting firm's activity during 2008-2009 and 2010-2013 (C2.1) and the company's assessment of shock persistence (C2.2).

	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		Availability of supplies from your usual suppliers			
a. Structure of answers												
	2010-2013	2008-2009	2010-2013	2008-2009	2010-2013	2008-2009	2010-2013	2008-2009	2010-2013	2008-2009		
No response	0.5%	4.9%	2.2%	6.7%	2.3%	6.3%	1.5%	5.7%	1.2%	5.9%		
Decrease	33.2%	34.5%	23.5%	19.4%	14.3%	12.0%	33.5%	30.6%	5.5%	4.9%		
Unchanged	19.9%	27.3%	45.0%	51.0%	66.1%	71.7%	49.0%	55.7%	73.7%	78.0%		
Increase	46.3%	33.3%	29.4%	22.9%	17.4%	10.0%	16.0%	8.1%	19.6%	11.2%		
Strong decrease, of which:	9.8%	9.1%	5.1%	3.4%	4.5%	2.9%	7.6%	4.3%	0.6%	0.7%		
No response	3.2%	1.3%	10.2%	3.5%	5.8%	33.8%	13.0%	12.0%	0.0%	0.0%		
Transitory	24.9%	60.3%	25.0%	57.4%	28.8%	38.4%	29.4%	47.6%	22.7%	71.7%		
Only partly persistent	35.0%	24.7%	29.2%	20.9%	23.5%	14.5%	38.7%	32.1%	35.2%	11.3%		
Long-lasting	36.8%	13.7%	35.7%	18.2%	41.8%	13.3%	18.9%	8.2%	42.2%	17.0%		
Strong increase, of which:	8.0%	6.7%	7.1%	4.8%	4.1%	1.3%	1.9%	1.6%	2.7%	0.9%		
No response	7.4%	4.3%	4.0%	2.6%	3.7%	4.9%	12.2%	21.0%	14.0%	25.3%		
Transitory	12.0%	33.9%	16.9%	46.4%	1.5%	14.9%	7.5%	5.1%	1.6%	4.4%		
Only partly persistent	36.8%	46.1%	36.1%	34.6%	33.5%	29.5%	14.3%	60.1%	17.7%	7.0%		
Long-lasting	43.8%	15.7%	42.9%	16.4%	61.4%	50.7%	66.0%	13.8%	66.7%	63.2%		
b. Contributions to % change 2010-2013 vs. 2008-2009												
	Strong decrease	Strong increase	Strong change	Strong decrease	Strong increase	Strong change	Strong decrease	Strong increase	Strong change	Strong decrease	Strong increase	Strong change
No response	1.2%	1.8%	3.1%	5.0%	2.0%	7.0%	-17.0%	2.1%	-14.9%	8.1%	-1.5%	6.6%
Transitory	-19.0%	-8.5%	-27.6%	-8.2%	-12.0%	-20.2%	4.8%	-3.2%	1.7%	3.4%	1.1%	4.5%
Only partly persistent	7.5%	-1.4%	6.1%	9.7%	11.9%	21.6%	15.5%	23.5%	39.0%	27.1%	-11.1%	15.9%
Long-lasting	14.8%	15.2%	30.1%	14.9%	28.4%	43.3%	36.4%	44.2%	80.5%	18.7%	18.2%	36.9%
Total	4.6%	7.2%	11.7%	21.4%	30.2%	51.7%	39.7%	66.6%	106.3%	57.3%	6.7%	63.9%

The firms' assessment of shock persistence seems to be consistent with the assessment of shock depth as far as those two sub-periods are concerned. Firms which declared significant changes in the selected factors influencing their business activity in the years 2010-2013 started to perceive those changes as **definitely less transitory and more long-lasting** (Figure 10, Table 1). Significantly more companies evaluated the shock in demand level as long-lasting (40% compared to hardly 15% in 2008-2009). Similarly, more firms perceived changes in the access to external financing (51% compared to 25%), customers' ability to pay (28% compared to 10%), as well as availability of supplies (62% compared to 43%) as long-lasting.

Figure 9. C2.1 How did the following factors affect your firm's activity during 2008-2009 and 2010-2013?

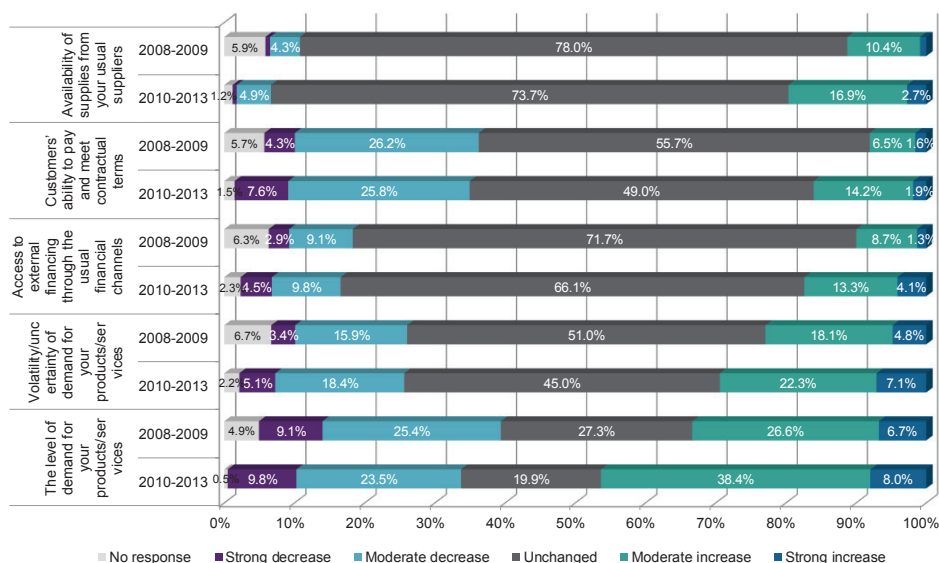
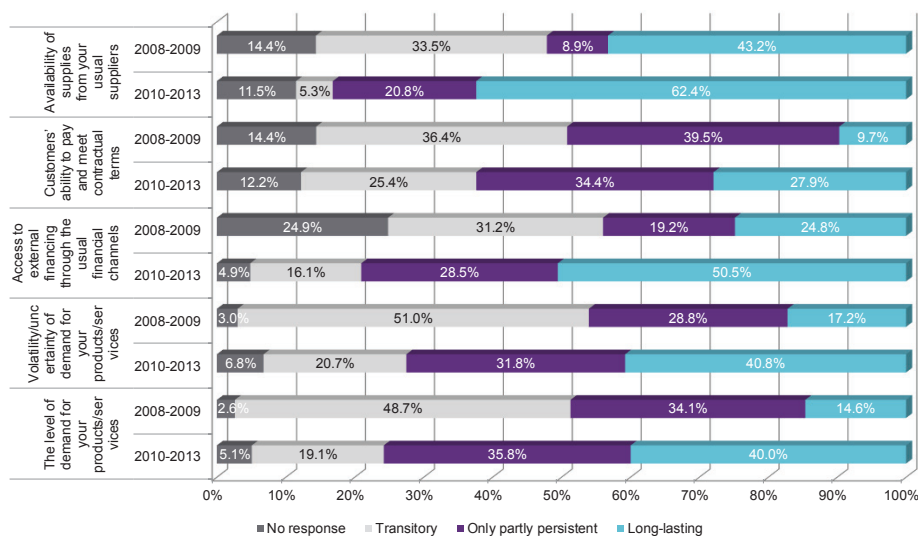


Figure 10. (Only) For those factors which affected you strongly, were the effects transitory, partly persistent or long-lasting (C2.2)?



In general, firms tended to treat negative changes as transitory more frequently, contrary to positive changes which were perceived as more persistent. However, compared to the previous period, **more firms started to perceive not only an improvement, but also a deterioration of their situation as long-lasting.** This

refers both to changes in demand uncertainty¹³, customers' ability to pay and, to a lesser extent, also to the level of demand for their products and services (Table 2, panel "b"). In the case of external financing and availability of supplies there were more positive changes which have been evaluated by the firms as long-lasting or partly-persistent.

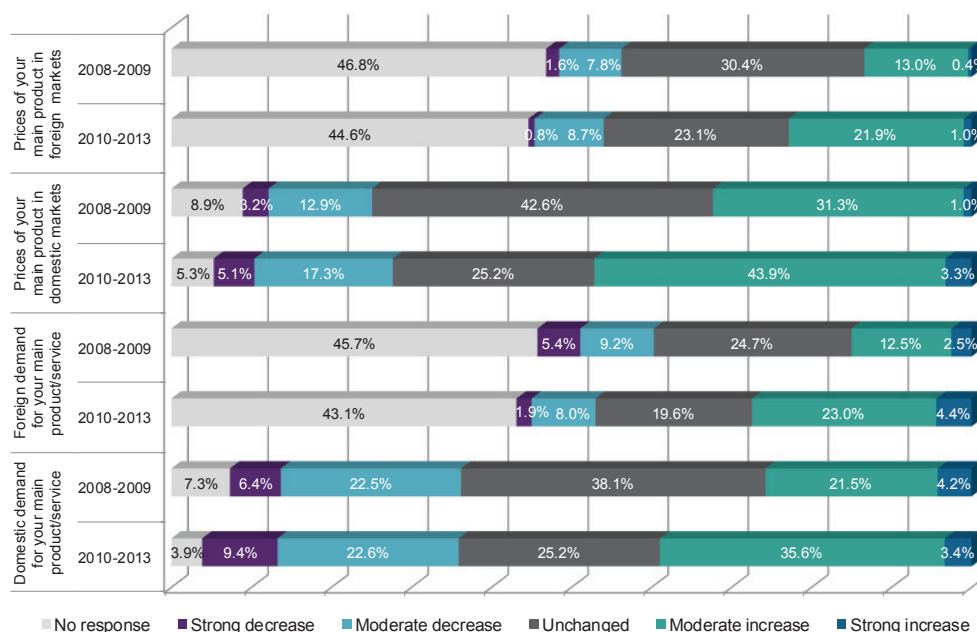
The strongest change in the firms' perspective on the further demand development was observed in construction and trade where definitely more companies started to perceive hitherto (negative) demand changes as long-lasting.

i. Changes in demand and prices

During the second recessive period (2010-2013) companies in Poland noticed a clear increase in foreign, and to lower degree, also in domestic demand for their products and services (Figure 11). About a half of the enterprises which responded to this issue declared a moderate or sharp increase in foreign demand during 2010-2013. Additionally on a domestic market relatively more firms then earlier identified a drop in demand. In general, more frequent changes in demand resulted ultimately in higher prices both on the foreign and domestic market.

¹³ In the years 2010-2013 more than 29% declared an increase in demand volatility, compared to less than 23% in the period before, which indicates deterioration of the situation, despite improvement in the demand level. Relatively more enterprises treated this uncertainty increase as long-lasting.

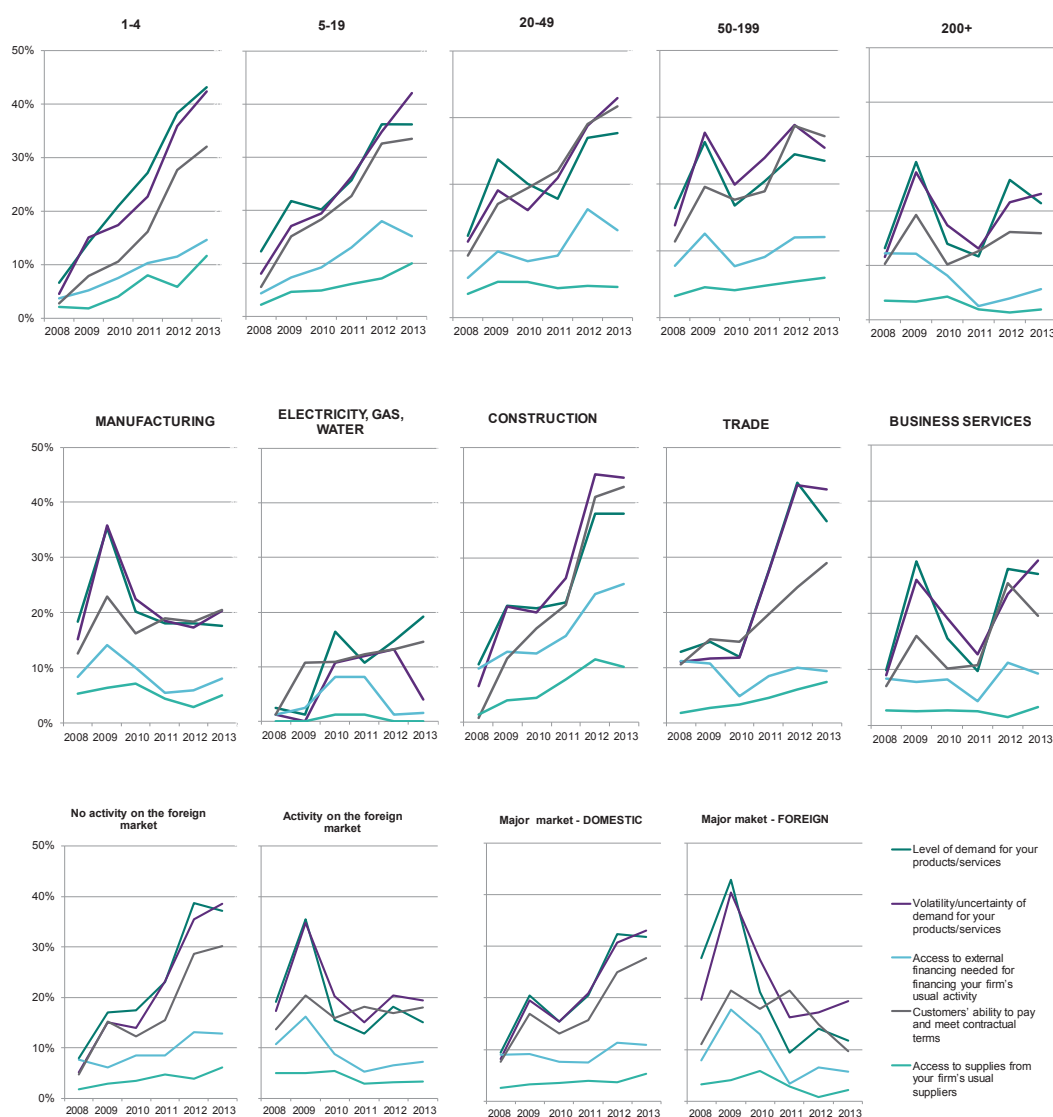
Figure 11. C2.6 How did prices and demand for your main product evolve during 2010-2013?¹⁴



Negative shocks affected various categories of enterprises in a different way. **During the first crises episode (2008-2009) mainly bigger firms were affected by shock, mostly representing manufacturing and business services.** At the same time, small and micro enterprises remained almost unaffected, although later the crisis gradually spread from medium-sized and large companies to the smaller ones. As a result, while **bigger entities had already started to recover in 2013**, smaller firms with a workforce of up to 49 persons had to cope further with increasing demand volatility and customers' worsening ability to pay. In contrast to small enterprises, larger companies experienced a period of temporary improvement in the years 2010 and 2011, turning out to be more responsive to economic growth fluctuations (Figure 12). They also showed signs of recovery already in 2013 as far as the level of demand was concerned.

¹⁴ A relatively large share of firms with no response to the questions related to foreign market issues results from their limited foreign market activity.

Figure 12. Negative shocks by size, sectors and activity on the foreign market (NC2.9).



With regard to the sectors analysed, the most rapid reaction in the level and volatility of demand was observed in 2009 in manufacturing, followed by a slightly weaker response in business services. A low impact of the shock in construction at the beginning of the slowdown may have been determined by intense infrastructure investments before 2010. Trade reacted to the shock about one year later. The reaction of both construction and trade to the demand shock was lagged, but its magnitude rose gradually for two years, to reach maximum peak in 2012, at a level remarkably higher than in case of manufacturing in the year 2009. It is difficult to determine to what extent the shock was transmitted from one sector to

another. However, it is likely that both shocks: the external one observed in the first sub-period in manufacturing, characterized by the highest share of foreign market activity, and the domestic one which hit mostly construction, could have been reflected also in the latter reaction of services.

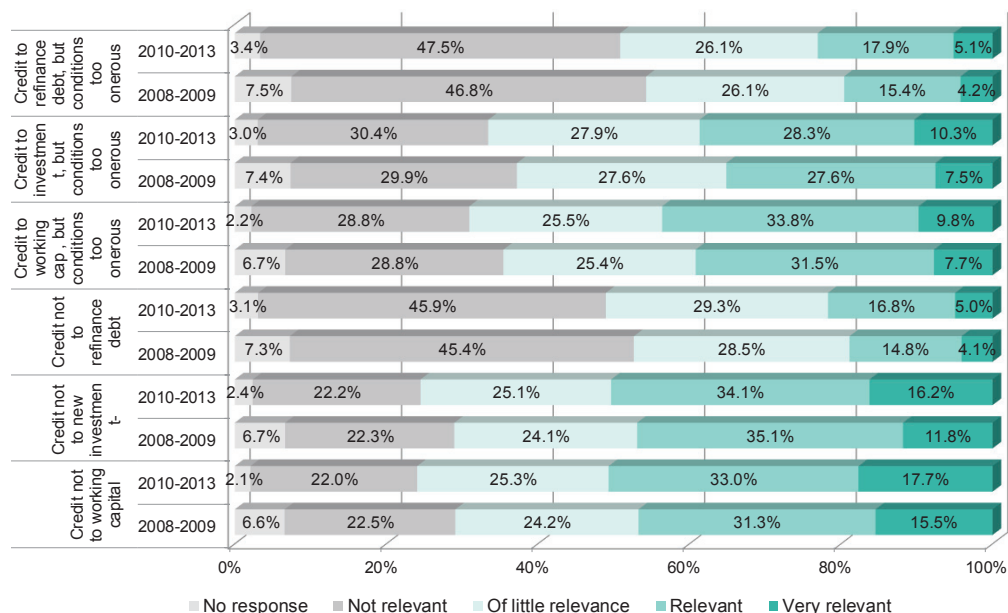
ii. Changes in financing conditions

While in 2010-2013 over 33% of companies reported a drop in customers' ability to pay and meet contractual terms, only 14% of them declared a deterioration in access to external financing. Moreover, customers' ability to pay had worsened significantly since 2009. At the same time the general accessibility of external financing remained stable, though varying across different sectors and different enterprise categories. Financing conditions deteriorated remarkably mainly for the small and medium-sized companies, as well as in building sector. A relatively smaller importance of external sources of financing resulted from the specific structure of funds in the Polish enterprise sector, more precisely a fairly high share of self-financing (in particular among SMEs)¹⁵. This is why more than a half of interviewed enterprises were likely to assess potential problems with obtaining external financing as not so relevant or completely irrelevant (Figure 13). Controlling their answers by reference period it appears that all types of credit gained slightly in importance. However, the differences between these two periods analyzed appears to be statistically insignificant. Approximately 50% of responding companies mentioned two kinds of credit whose inaccessibility may have caused real problems in the context of their financing needs: **operating loans and investment loans**. On the other hand, only 22% of the enterprises perceived the lack of opportunity to refinance their debt with bank credit as a relevant problem.

¹⁵ More: Enterprise and Industry POLAND 2014 SBA Fact Sheet. European Commission.

Clearly a possible tightening of credit conditions turned out to be less problematic in the opinion of enterprises.

Figure 13. C2.3 How relevant were for your firm each of the following happenings?



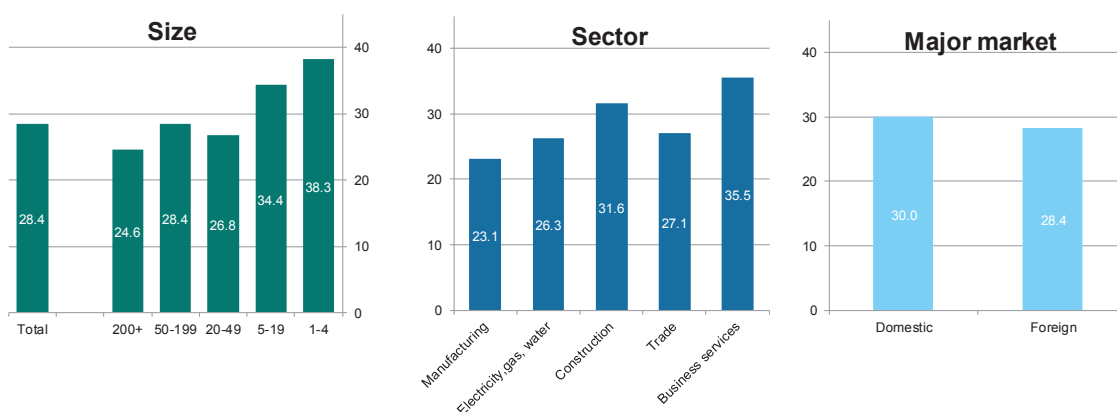
iii. Changes in cost structure

According to the WDN3 results, **the latter sub-period analysed was characterized by sharper increases on the cost side** as compared to the initial wave of the crisis (2008-2009). But here again cost increases reveal a cumulative change for the whole longer sub-period (2010-2013), much more heterogeneous than the first phase of the slowdown. A stronger increase in practically all cost categories was determined by a temporary improvement in the economic situation in Poland in the years 2010-2011, when companies could stop further cost reductions, as well as by cost increases following an acceleration of economic growth in 2013.

In 2013, on average, **labour costs constituted more than 28% of total operating expenses in enterprises in Poland**. This percentage varied significantly across different enterprise categories (Figure 14), in particular by size bins – from 25% in the largest companies to more than 38% in case of the micro enterprises. By branch,

the lowest share of labour costs was reported by companies representing manufacturing (23%), the highest one by firms from the construction sector and business services (32% and 36%), in particular those operating mainly on the domestic market.

Figure 14. C4.1 What percentage of your firm's total costs (all operating expenses) was due to labour costs?



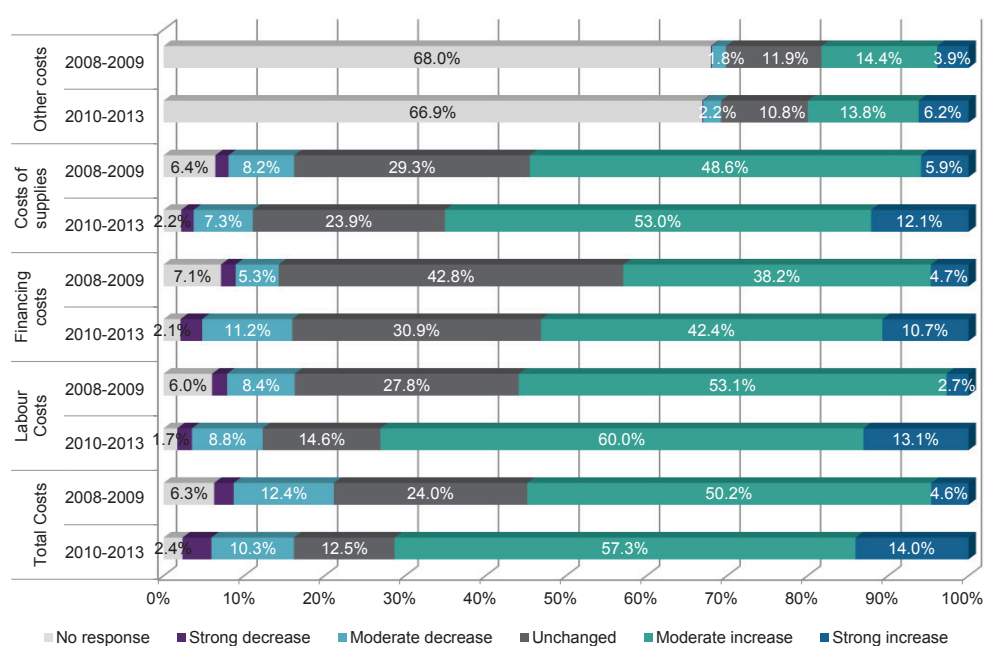
Changes in the cost structure observed in the period of analysis were an effect of: firstly, **labour cost increases**, secondly, **higher costs of supplies** (Figure 15, Figure 16). The share of firms who reported labour cost increases during the second sub-period reached the level of above 73% and was by 17 pp. higher than in 2008-2009¹⁶. Positive changes in labour cost has been observed mainly in manufacturing and construction. More decreases in this cost category have been identified only in the section 'Electricity, gas and water supply,' but due to the specifics of this branch (presence of some non-market mechanisms), it should be treated rather as a kind of outlier. **A large size of enterprises also favoured stronger cost reductions** and at

¹⁶ A relatively low share of firms who noticed cost decreases in the years 2008-2009 (approx. 15%), time of the deepest economic slowdown, results from the nominal cost (also wage) downward rigidity. That's why changes in the fraction of increases seem to be more reliable indicator of business activity.

the same time constrained cost increases, especially with regard to financing and labour costs, which is related to better negotiating position of large employers. Furthermore, on average **65% of firms experienced an increase in cost of supplies** during the second period, by 9 pp. more than during the first wave of the slowdown.

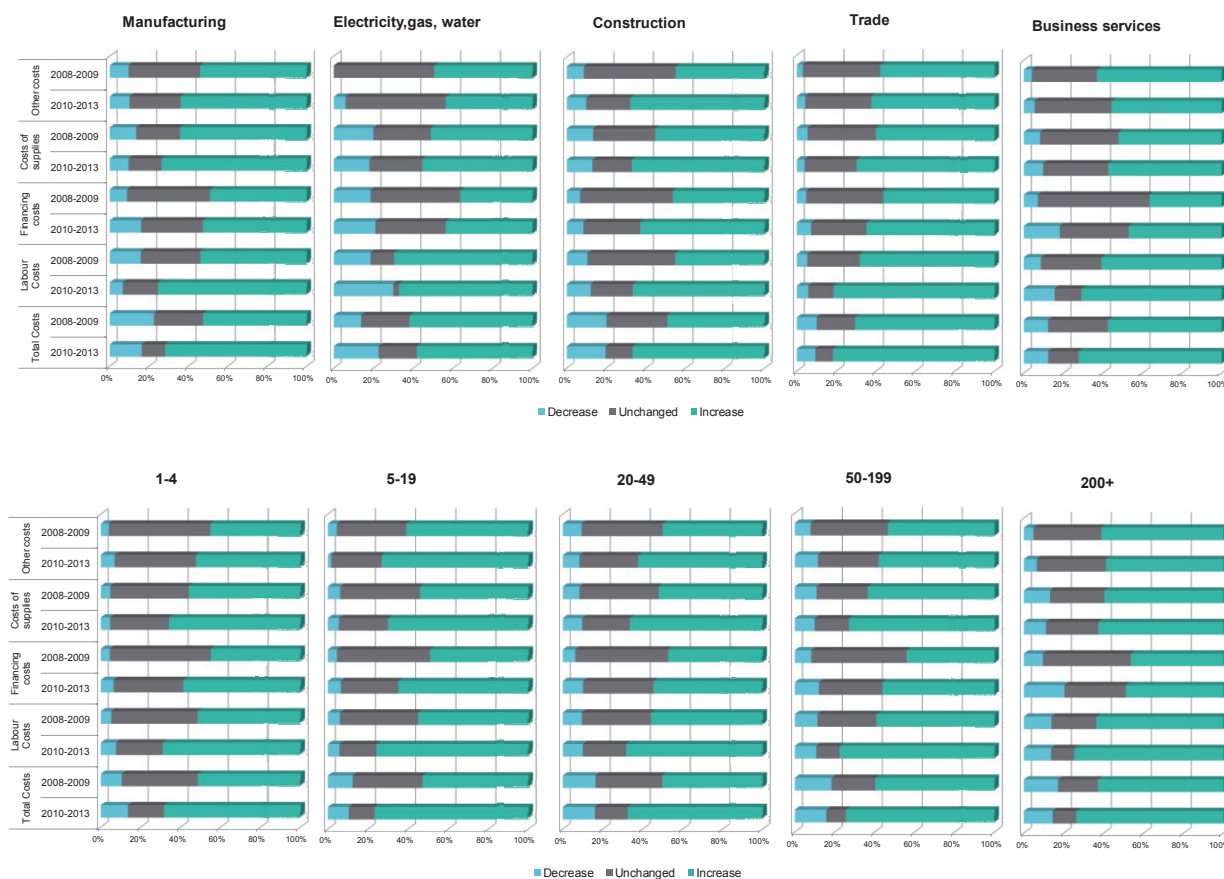
Neither presence on the foreign market nor the share of permanent contracts in total employment proved to be the important factors determining changes in the cost structure of the firms¹⁷. Nonetheless, changes in all the cost categories reported by companies definitely confirm an upward tendency emerging in the second sub-period.

Figure 15. C2.4 Evolution of total cost components during 2008-2009 and 2010-2013



¹⁷ Compared to domestic market companies, enterprises with foreign market activity noticed during both recessive periods only a slightly stronger increase in supply costs and, to a lesser extent, also financing costs. The share of firms having recorded increased costs differed between those two groups of companies by ca. 7-10 pp. in the first period (mainly financing) and by 2-5 pp. in the second one.

Figure 16. C2.4 Evolution of components of total costs evolve during 2010-2013, by SECTOR and SIZE?



* The category "No response" hidden, percentages do not add up to 100.

b. Labour cost adjustment

i. Adjustment in wages and labour force

Both the size of adjustment and the cost strategy followed by firms can be analysed by assessing the deviation of percentage of companies who reported cost changes in the face of a demand or price shock from the percentage of firms observing changed costs but not suffering from any demand or price shock experience (Table 2, Table 3).

As already mentioned, the strongest adjustment took place in the period 2008-2009. In response to demand shock 28% of enterprises reduced their total costs, i.e. by 18.9 pp. more compared to the situation of the companies not facing any demand shock at that time. Among different cost types, **the relatively largest part of the population decreased labour costs (20%) as well as costs of supplies (ca. 19%) in reaction to the demand shock.** Cost reductions turned out to be particularly widespread among companies who had to cope with a demand shock on the foreign market. In the period 2008-2009, 36% of them needed to reduce some of their cost types (by 24 pp. more than among firms not exposed to a any shock), almost 31% reduced their labour costs and 26% costs of supplies (by 18 pp. more than without a shock). In addition to fairly common cost reductions, definitely more enterprises than before constrained their cost increases. They limited in particular labour cost increases (fewer new hires), by over 14 pp. in case of companies with a demand shock. Experiencing a demand shock appeared to have an opposite effect on financing costs, which tended to increase more widely after an occurrence of a demand shock, which may have forced some companies to use more costly sources of financing. At the same time a price shock resulted, to a larger extent than a demand shock, in reductions in cost of supplies. About 27% of enterprises affected by the price shock in the period 2008-2009 reduced their total costs.

In the second sub-period cost reductions were only slightly milder than in the previous period, but the frequency of cost increases among all the firms was remarkably higher (over 71% compared to 55% in 2008-2009), mostly due to a higher number of labour costs increases. However, the scale of increases in labour costs was rather moderate and followed a sharper increase in labour productivity, which resulted in a higher level of general competitiveness (Figure 29). With regard to the group of firms being affected by an external shock, the **price shock effect turned out to be in general more persistent than the demand shock.** Contrary to the demand shock, the price shock effect on labour costs even

intensified a little in the second sub-period (Table 3). In other words, entrepreneurs experiencing price shocks became, already in the period 2010-2013, slightly more radical with regard to employment reductions than in the past, as well as than those who had to cope at that time with a demand drop. Compared to the previous sub-period reductions in financing costs were also more common among companies, especially those acting on the foreign market. Decreasing financing costs may have resulted primarily from a successive improvement of the firms' economic situation, secondly from low interest rates and a deflationary pressure.

Table 2. Changes in cost categories (C2.4) in reaction to demand and price shocks (C2.6).

	Total Costs		Labour Costs		Financing costs		Costs of supplies		Other costs	
	2010-2013	2008-2009	2010-2013	2008-2009	2010-2013	2008-2009	2010-2013	2008-2009	2010-2013	2008-2009
ALL ENTERPRISES										
Decrease	13.8%	14.9%	10.6%	10.3%	13.9%	7.2%	8.9%	9.8%	2.3%	1.9%
Increase	71.3%	54.8%	73.1%	55.9%	53.1%	42.9%	65.1%	54.5%	20.0%	18.3%
WITH DEMAND SHOCK										
Decrease	18.6%	27.7%	17.7%	20.0%	14.4%	9.8%	12.2%	18.8%	2.7%	4.7%
Increase	65.9%	45.3%	63.9%	46.2%	56.3%	49.2%	56.3%	50.3%	19.2%	16.4%
WITH FOREIGN DEMAND SHOCK										
Decrease	18.3%	36.0%	26.9%	30.8%	27.9%	9.5%	11.2%	25.8%	2.9%	5.2%
Increase	55.9%	34.7%	53.8%	32.7%	44.6%	43.2%	53.9%	42.4%	23.1%	12.7%
WITH PRICE SHOCK										
Decrease	21.2%	27.3%	21.5%	20.8%	22.3%	14.4%	18.1%	21.8%	5.2%	6.5%
Increase	60.1%	40.8%	59.7%	44.0%	46.6%	39.0%	51.5%	43.6%	18.7%	17.5%
WITH FOREIGN PRICE SHOCK										
Decrease	19.4%	29.2%	28.3%	27.2%	33.8%	9.9%	14.5%	28.4%	6.5%	7.7%
Increase	53.6%	33.6%	54.3%	37.7%	40.8%	38.7%	51.8%	33.6%	16.8%	14.3%

Table 3. Differences (in pp.) between changes in cost categories (C2.4) in reaction to demand and price shocks (C2.6) between those without no shock episode and those having experienced a shock.

	Total Costs		Labour Costs		Financing costs		Costs of supplies		Other costs	
	2010-2013	2008-2009	2010-2013	2008-2009	2010-2013	2008-2009	2010-2013	2008-2009	2010-2013	2008-2009
DEMAND SHOCK										
Decrease	7.5	18.9	11.1	14.4	0.7	4.0	5.1	13.4	0.6	4.2
Increase	-8.6	-14.1	-14.4	-14.3	5.0	9.2	-13.8	-6.5	-1.4	-2.9
FOREIGN DEMAND SHOCK										
Decrease	4.9	24.7	17.9	24.0	15.5	2.8	2.5	18.8	0.6	3.9
Increase	-17.2	-23.5	-21.3	-27.1	-9.5	0.3	-12.3	-14.4	3.4	-6.6
PRICE SHOCK										
Decrease	9.7	15.1	14.4	12.8	11.2	8.9	12.0	14.7	3.8	5.7
Increase	-15.0	-17.1	-17.7	-14.6	-8.8	-4.8	-18.0	-13.5	-1.9	-1.1
FOREIGN PRICE SHOCK										
Decrease	6.2	15.7	19.4	18.6	22.0	3.0	6.1	20.5	4.6	6.5
Increase	-19.6	-23.5	-20.6	-20.0	-13.6	-4.8	-14.6	-23.3	-3.6	-4.5

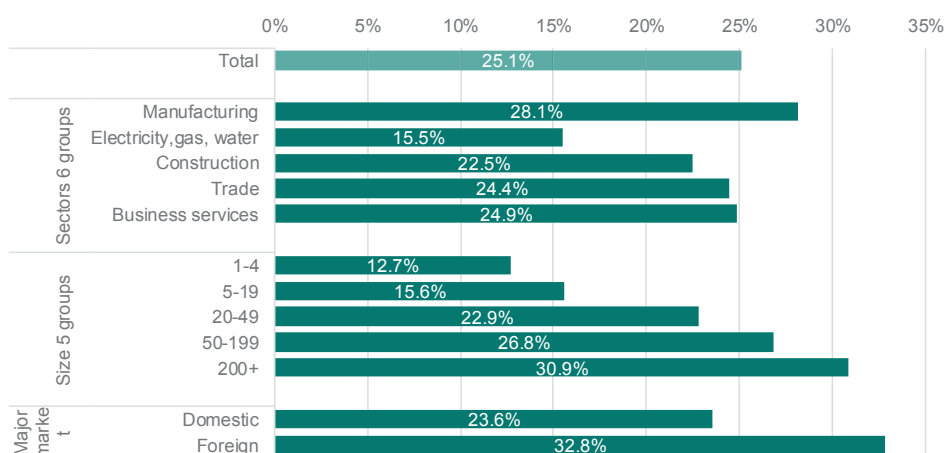
ii. Trade-offs in adjustment strategies

Firms' adjustment strategies were carried out both via quantitative and qualitative channels, affecting not only the level of labour input but also its composition. It is worth emphasizing that the adjustment in Poland, especially during the initial phase of the economic slowdown, was carried out, to large extent, through a rapid drop in average wage growth. The relatively **high responsiveness of aggregate wages** in comparison, for instance, to the slack in 2001-2003 **was supported by a specific employment structure**, in particular the rising share of fixed-term contracts in total employment¹⁸, which made the adjustment more flexible and less expensive for entrepreneurs. Temporary or fixed-term job contracts constituted about 25% of total employment by the end of 2013¹⁹. A particularly high share of these contracts was observed in larger enterprises with a well-founded market position, belonging to the manufacturing sector and performing its business activity mostly on the foreign market (Figure 17).

¹⁸ A broader empirical analysis of the impact of fixed-term jobs on the labour market adjustment in case of Germany, see Pfeifer (2009). According to their results, utilisation of this type of contracts lowers the probability of employment adjustment in the core workforce.

¹⁹ WDN3 results also seem to be compliant with the Polish LFS data, which indicate that 27.3% of workers were employed on a basis of temporary or fixed-term contracts in 2013Q4 (inclusively a small fraction of civil-law contracts). This percentage, after a period of stabilisation 2008-2012, continued an increasing tendency observable already since 1990s. For cross-country comparisons see Eichhorst (2014).

Figure 17. Share of temporary or fixed-term workers in total employment as per end of 2013 (C3.1), by selected categories.



The predominant way to adjust labour costs continues to involve changes in labour input (Figure 17, Figure 20). Wage freezes were applied only by some companies and the significance of wage cuts was marginal (Figure 21, Figure 28). More than 35% of firms chose to alter either the level or composition of their workforce. The fraction of firms changing their labour input also increased with the size of enterprises, thus also with their bargaining position. However, there was no direct relation between the frequency of labour input alterations and the share of temporary employment. Although the highest share of fixed-term workers was in manufacturing, the relative number of enterprises modifying their labour input was fairly moderate in this sector. In business services the incidence of labour input adjustment in the years 2010-2013 was the strongest despite a relatively moderate share of temporary workers there. The labour input adjustment (Figure 18, Figure 19) was carried out namely not only quantitatively by reducing the number of employees but also qualitatively by changing the employment structure. Two types of firms experienced the strongest labour input adjustment. On the one hand there were smaller enterprises having in their employment structure ca. two thirds of temporary workers, where pure staff reductions were likely to dominate, on the other hand large companies with less than 20% of temporary staff, which could have been trying to increase their employment flexibility by reducing for instance

the number of permanent positions. Large companies could afford to modify quite often their labour input, they could also afford to offer frequently fixed-term contracts to new employees.

Figure 18. C3.3a. During 2010-2013 did you need to significantly reduce your labour input or to alter its composition?

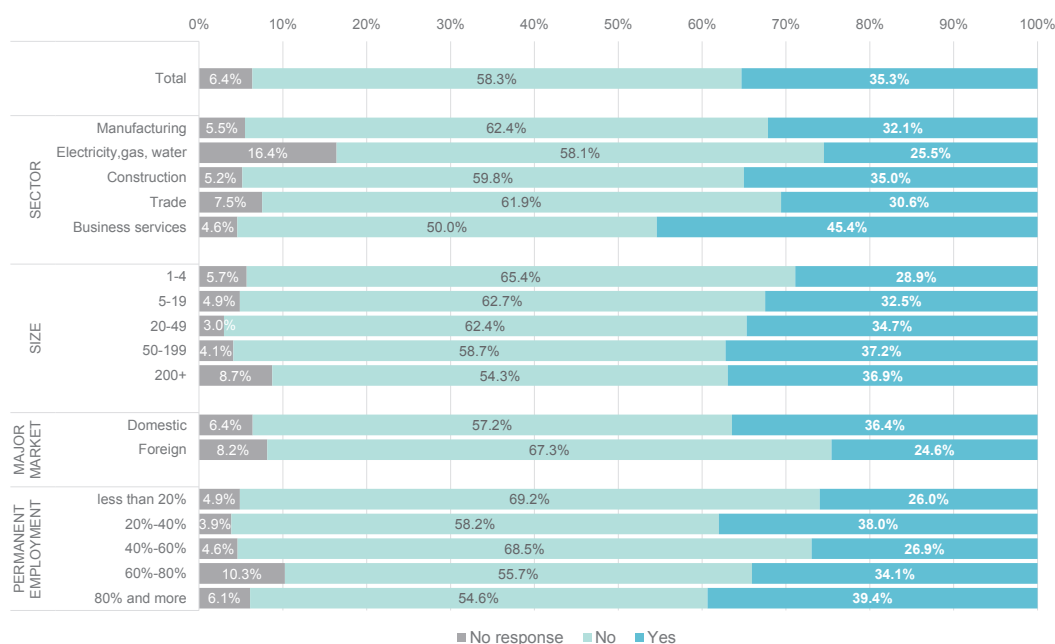
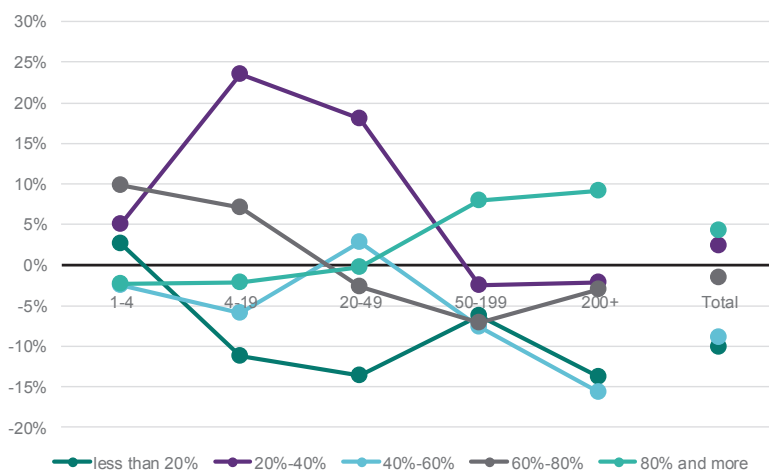


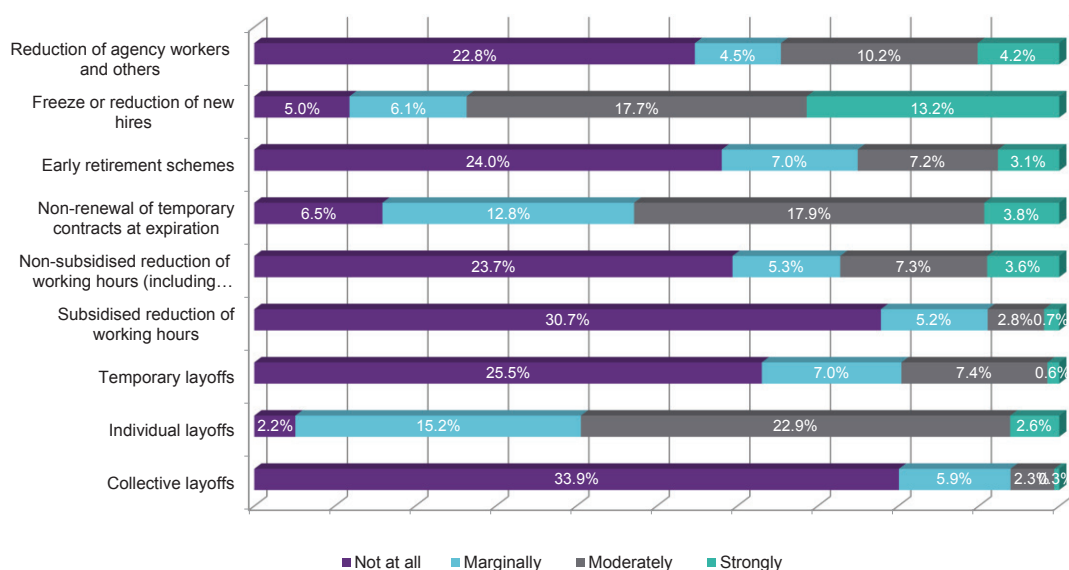
Figure 19. Companies who reduced significantly their labour input or altered its composition during 2010-2013 (C3.3a) by size and by the share of permanent employment – deviation from size bin average (in pp.)?



According to the WDN3 results employers used three main measures in order to keep labour input at the level adequate to their economic condition in the years

2010-2013 (Figure 20): almost 37% **froze or reduced the number of new hired workers** (and 36% of them used this measure intensively), 41% used **individual layoffs** (but only 6% of them intensively), and on average 35% took advantage of an opportunity **not to renew temporary job contracts** at expiry (of them 11% applied it frequently). Less than one fifth of all enterprises used: reduction of agency workers, early retirement programmes, non-subsidized work-time reduction and temporary layoffs. On the other hand, collective layoffs or subsidized reduction of hours were used really sporadically. A relatively high share of enterprises with a dominating share of permanent workers reported applying individual layoffs as a labour adjustment measure.

Figure 20. C3.3b. Which of the following measures did you use to reduce your labour input or alter its composition when it was most urgent?*



* The category "Not applicable" hidden, percentages do not add up to 100.

There was a kind of **complementarity between some of the measures** used by the enterprises in order to adjust labour input. Subsidized reduction of hours worked occurred relatively frequently together with non-subsidized short-time work. Non-renewal of temporary contracts which were expiring was often used together with individual and temporary layoffs, but also was accompanied by freezing or reduction of new hires and, but to lesser extent, by early retirement schemes. The

remaining measures also indicated a positive, although weaker, correlation illustrated by Spearman rank correlation matrix (Table 4).

Table 4. Spearman rank cross-correlation coefficients for the measures used by firms to reduce labour input or alter its composition (C3.3b.).

	Collective layoffs	Individual layoffs	Temporary layoffs	Subsidised reduction of working hours	Non-subsidised reduction of working hours (incl. 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
Collective layoffs	1								
Individual layoffs	0.1276*	1							
Temporary layoffs	0.0751	0.1079	1						
Subsidised reduction of working hours	0.0664	-0.0604	0.2079*	1					
Non-subsidised reduction of working hours (incl. reduction of overtime)	0.1462*	0.0827	0.2773*	0.4063*	1				
Non-renewal of temporary contracts at expiration	0.1584*	0.3763*	0.3066*	0.085	0.2731*	1			
Early retirement schemes	0.2138*	0.1363*	0.1557*	0.1591*	0.2245*	0.2831*	1		
Freeze or reduction of new hires	0.0865	0.2345*	0.1861*	0.0814	0.2869*	0.3171*	0.2541*	1	
Reduction of agency workers and others	0.1036	0.1388*	0.1377*	0.1119	0.2346*	0.2473*	0.2159*	0.2592*	1

In the period 2010-2013 no real trade-off between negative changes in wages and negative changes in employment has been identified. On the contrary, WDN3 results show a **positive correlation between labour outflows and the incidence of wage freezes or cuts** (Figure 21). The companies where the scale of worker outflow increased sharply were also more likely to freeze or cut wages of their employees.

Figure 21. Worker flows (NC3.6) vs. wage freezes or cuts (C4.7).



Also when considering (net) employment level changes, workforce reductions were predominantly connected to more frequent wage freezes or cuts. Nonetheless, some firm-specific characteristics strengthened or alleviated the relationship between wage negative adjustment and employment reductions. Accordingly, the relationship tended to be particularly strong in the case of the biggest companies, especially those being active on the foreign market. Neither the sector nor the share of permanent workers in the employment structure seemed to influence significantly the intensity of the wage-employment relation (Figure 22).

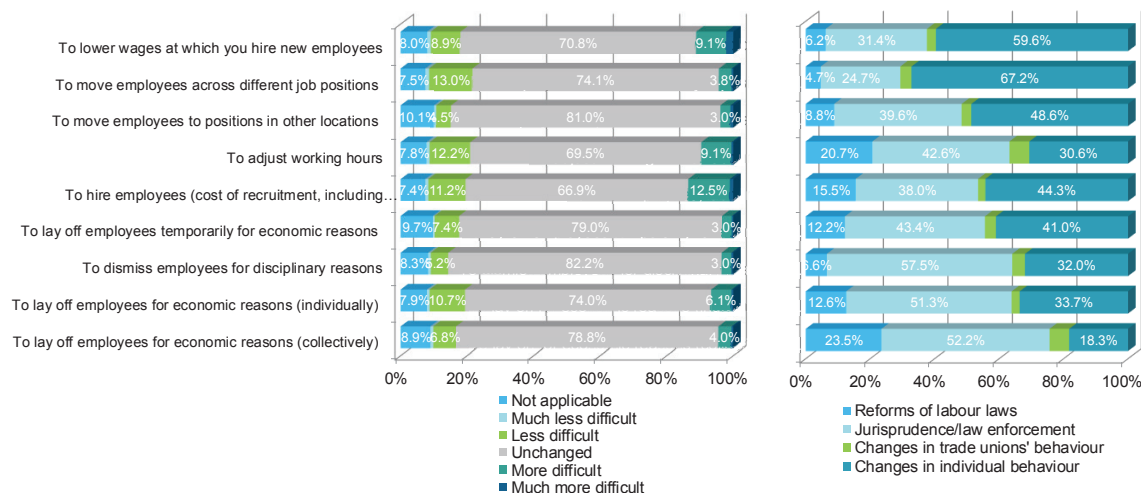
Figure 22. Incidence of freezes/cuts (C4.7) vs. employment reductions over 2010-2013 (NC3.3a)?



iii. *Changes in the possibility to adjust labour costs*

The majority of enterprises in Poland (ca. 75%) assessed the **possibility to adjust wages and employment in 2013 as unchanged** compared to 2010. However, more companies perceived changes observed during this period as liberalizing adjustment possibilities (about 9%), than as constraining ones (less than 6%). From the set of adjustment possibilities, entrepreneurs considered as the most positive changes having taken place **moving employees across different job positions** (13%), **adjusting working hours** (12%), as well as in **laying off employees for economic reasons** (11%). The first type of changes was, however, attributable mostly to changes in individual workers' behaviour. An easier working time adjustment resulted mainly from the changes in labour law and a better law enforcement, but also from changes in trade unions' and individual behaviour. Both changes in the possibility of lowering wages and moving employees either across job positions or across locations were determined mostly by changes in individual behaviour. There were relatively many enterprises who differed in their view concerning the changes in hiring opportunities. It may reflect both the time and company heterogeneity. The period 2010-2013 comprises years of recovery (2010-2011) after an introduction of an anti-crisis reform package of (including easing of hires for a fixed-term), as well as years of the second economic slowdown (2012-2013H1) i.e. the moment when more liberal anti-crises rules expired. During this period the burden of adjustment also moved from the largest entities towards the smaller ones, mostly domestic demand driven enterprises.

Figure 23. Changes in adjustment possibilities in 2013 compared to 2010 (C3.4a) and factors attributable (NC3.4b).



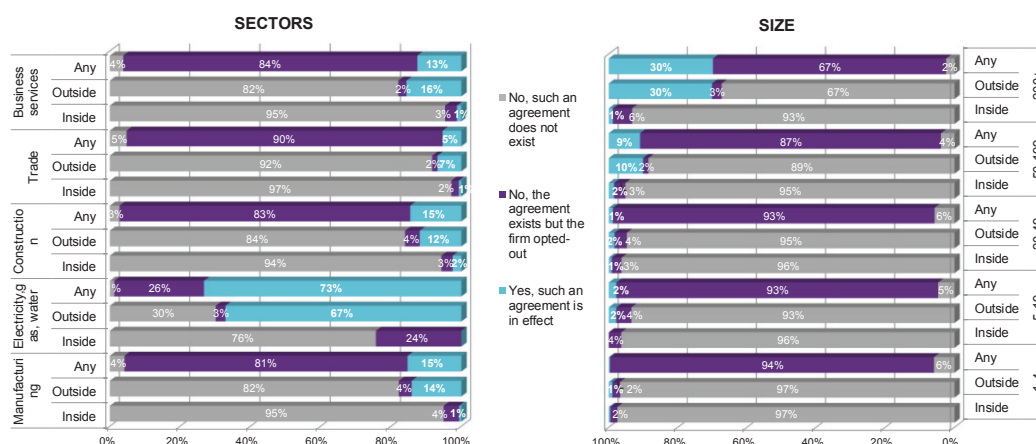
c. Changes in wage setting

Wage setting mechanisms and some of their structural characteristics appeared to be decisive for the final result of the labour market adjustment in Poland in times of the economic slowdown. Relatively low representation of collective bargaining and wage indexation mechanisms as well as an important role of flexible wage components contributed to a stronger earnings' reaction.

i. Coverage, scope & level of collective bargaining

In general, over 80% of the enterprises reported that in 2013 there were some types of collective wage bargaining agreements available for them, but they were not taken advantage of. On average, about **16% were active participants of a collective agreement, predominantly outside the firm**. Merely less than 1% of enterprises reported that an inside collective agreement was in effect (Figure 24).

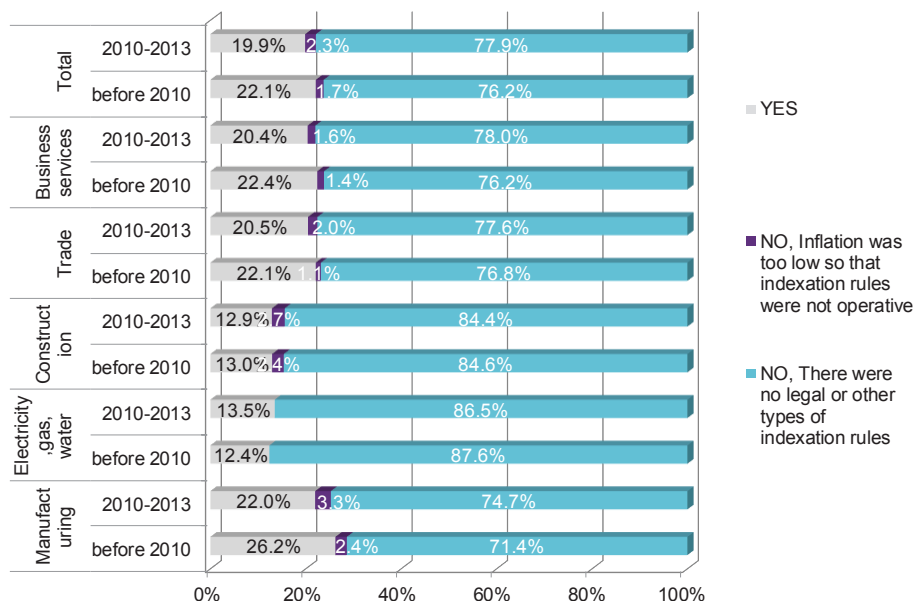
Figure 24. C4.3 In 2013, did your firm apply a collective pay agreement inside or outside of the firm?



Except for the section 'Electricity, gas and water supply', where the share of enterprises participating in a collective wage bargaining agreement accounted for almost three fourths, for other sectors the percentage remained within the range 6-15%, the lowest in the trade sector. Apart from that, there was a strong correlation between the collective agreement participation and the size of enterprises. While in the companies with the workforce of over 200 this participation rate amounted to over 30%, in the smaller enterprises employing up to 49 workers, participation in this kind of agreements was absolutely marginal (less than 1%). In fact, **even in the largest companies collective wage bargaining agreements on the firm level were quite rare.**

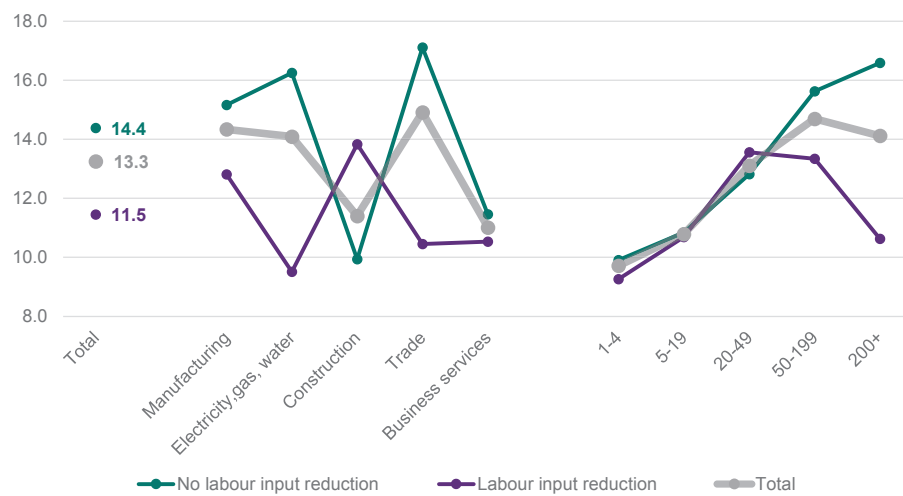
Another structural feature of the labour market in Poland, confirmed by the WDN3 results, was the relatively **weak representation of wage indexation mechanisms** in the wage setting process. The share of companies aligning changes in the base wage with changes in the inflation rate even decreased slightly during 2010-2013 as compared to the period before 2010, from 22% to nearly 20% (Figure 25). The weakest representation of indexation mechanisms could be found in construction, where the share didn't exceed 13%, the strongest – in manufacturing with the share of 22%, 4 pp. lower than in the period before 2010. In addition, a slow price growth contributed to the further diminishing of the role of wage indexation mechanisms in Poland.

Figure 25. C4.5 Did your firm adapt changes in base wages to inflation before 2010, and during 2010-2013?



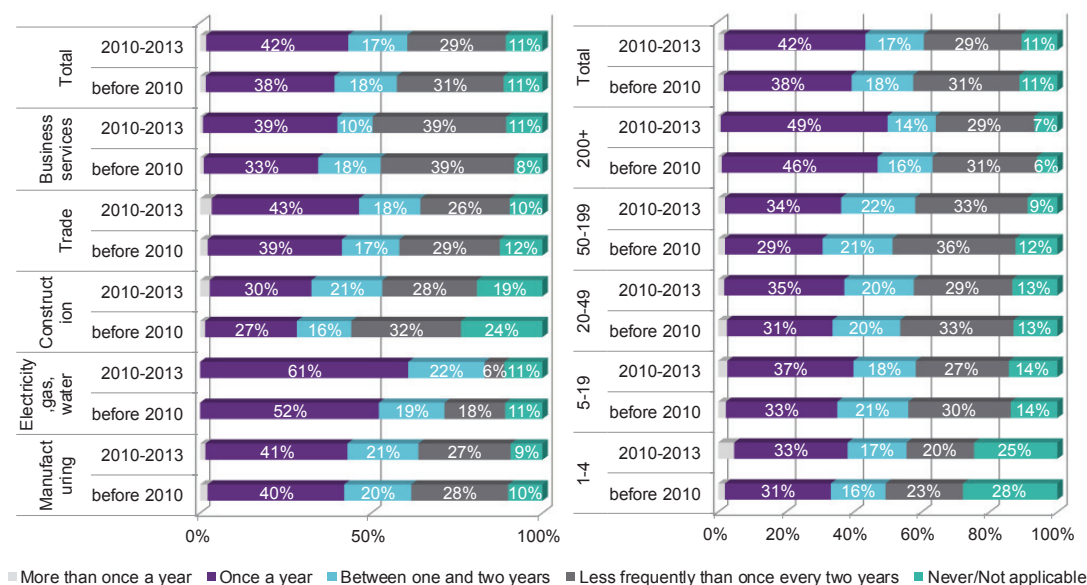
During the crisis also the variable pay elements played an important role in making labour market in Poland more flexible. The share of bonuses and benefits in 2013 amounted on average to about 13%, but this percentage varied across sectors and size bins. Variable pay elements tended to constitute a relatively lower fraction of total wages in the case of business services and construction. Companies from trade and manufacturing sectors were characterized by a relatively higher share of those elements. The share of bonuses grew with the firm size and was the highest in the largest enterprises, who didn't experience labour input reductions. Except for the construction sector, a **higher share of flexible wage components was negatively correlated with workforce reduction** episodes (Figure 26).

Figure 26. Bonuses and benefits related to individual or company performance, as a percentage of total wage bill in 2013 (C4.2) vs. significant labour input reduction (C3.3a), in %.



Flexible wage components played an important role in the firms' adjustment to the crisis all the more that base wages were changed mostly with the frequency lower than once a year. Although this frequency increased a little compared to the period before 2010, suggesting a systematic but slowly rising labour demand, **still 57% of enterprises didn't change the base wage level in a one-year horizon and nearly 11% didn't change it at all.** There were no significant differences between the sectors of the economy (Figure 27), but, on average, the base wage changes in the electricity sector, and, to a lesser extent, also in manufacturing, were more likely to occur within one-year period (with the frequency up to one year 61% and 41% respectively).

Figure 27. C4.6. How frequently was the base wage of the main occupational group typically changed (by SECTOR and SIZE)?



ii. Incidence of wage freezes or cuts

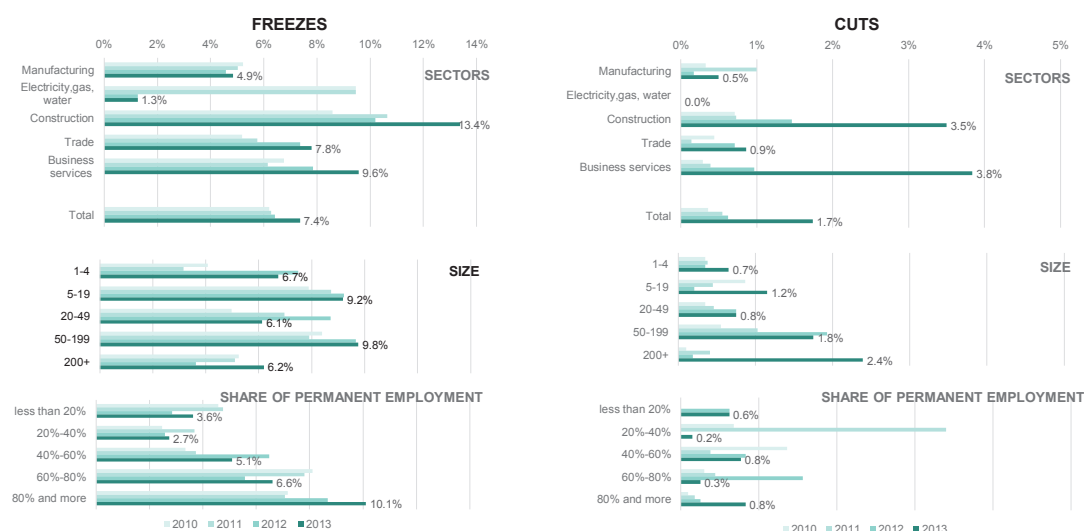
As already mentioned, the use of wage freezes as an adjustment instrument was rather rare among enterprises, but not as marginal as in case of wage cuts. The share of companies both freezing and cutting their wages demonstrated an upward tendency in the years 2010-2013. By the end of 2013, the **percentage of wage-freezing companies had risen up to above 7% (from about 6% in 2010)**, the percentage of **wage cutters increased to merely 2% (in 2010 less than 0.5%)**. Wage freezes were most popular in the construction sector, where more than 13% of the employers used that kind of instrument in order to reduce labour costs. On the one hand, there was no significant correlation between the size of the company and the freezes' frequency, on the other hand **the incidence of wage freezes rose with the share of permanent workers** in the employment structure, from 3% up to 10% (Figure 28). More stringent job conditions for both parties to a permanent job contract, and thus a stronger downward nominal wage rigidity, often implied base wage freezing as a natural adjustment possibility. However, higher incidence of

wage freezes in case of companies employing mostly permanent workers still did not guarantee less frequent changes in the labour input level or its composition. On the contrary, wage freezes were often complementary to significant labour input changes, also in the largest companies with more than 80% permanent employment (Figure 17).²⁰

Like wage freezes, **wage cuts occurred mostly in construction and business services** (3-4% of enterprises), and their incidence rose with the size of the company, however not exceeding 3% in case of the largest enterprises. The frequency of wage cuts, and, to a lesser extent, also wage freezes, increased mainly in 2013, i.e. in the last year of the analysed period. It suggests that employers were rather reluctant to treat nominal wage changes as an optimal way of adjustment. Moreover, while wage freezes were more widespread in the group of companies being active mostly on the domestic market, wage cuts were rather used by foreign market oriented enterprises.

²⁰ The most significant labour input changes were identified within two types of enterprises: the largest ones, with the highest share of permanent workers, as well as smaller firms employing up to 49 employees, with the share of permanent workers of 20-40% (Figure 19). Employment changes may have resulted from a specific firms strategy of reducing the number of workers with relatively the weakest negotiating position (temporary and newly hired), but could have been also sector specific.

Figure 28.C4.7 Over 2010-2013, did you freeze or cut base wages (% of firms)?



iii. Role of internal versus external factors

The period of austerity in 2008-2009 aimed at restricting firms' business was followed by some recovery in the years 2011-2012 and in the second half of 2013. As a consequence of higher economic growth and earlier labour cost cuts, through both wage adjustments and employment reductions, labour productivity (relative to labour costs) increased in the period 2010-2013 remarkably compared to the previous sub-period (Figure 29). The labour productivity increase may have resulted partly from a time-lagged reaction of labour costs to better economic conditions. As a consequence, the share of other types of costs increased as well.

Regression models (ordered probit) estimated in order to identify the impact of the key internal and external factors on labour costs also indicate a strong positive relation between labour costs and other types of working costs during both periods of analysis, which implies the complementarity of labour cost with regard to other types of costs. Overall, probit models demonstrate a non-monotonic labour cost dependence on productivity over the period of analysis. The labour cost-productivity relation namely turned from slightly positive in the first sub-period, when productivity and labour input were dropping, to slightly negative during the

years 2010-2013, when employers sluggishly started to restore their staffing levels in reaction to the already growing product demand.

In the period 2008-2009, besides other types of working costs, also company's price policy constituted an important factor determining labour cost changes. This moderate, but positive relation between prices set by enterprises and labour costs weakened in the second sub-period probably due to deflationary trends (Table 5). Thus, the cumulative impact of all internal factors also decreased in 2010-2013.

Figure 29. NC2.7 How did the following factors evolve in your firm during 2008-2009 and 2010-2013?

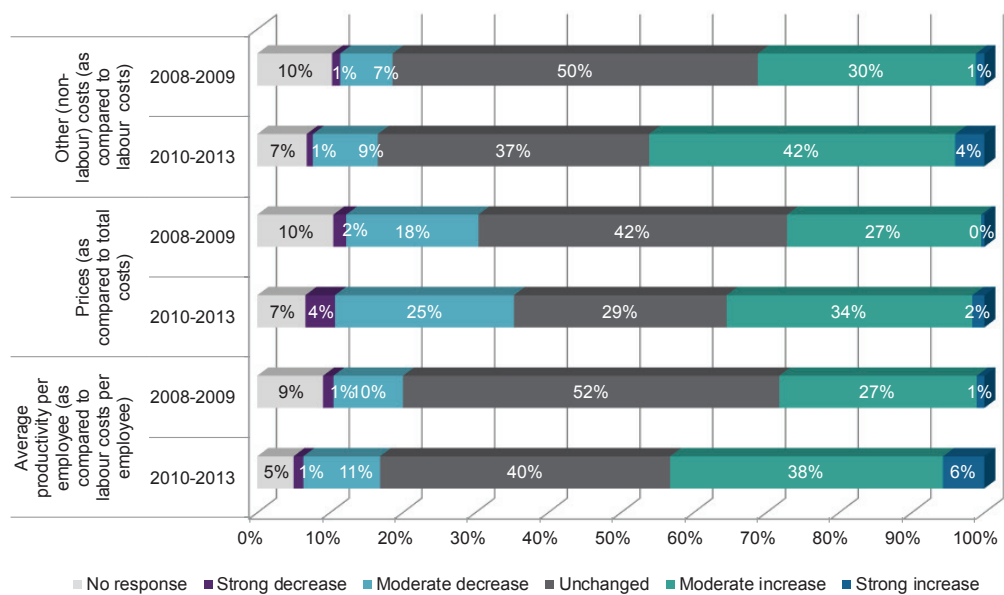


Table 5. Determinants of labour costs – ordered probit results for period 2010-2013 and 2008-2009 (odds ratios)

2010-2013							2008-2009						
Dependent variable: c2_4b. Labour cost change													
							1	2	3	4	5	6	
Explanatory variables:													
Sector (MANUFACTURING=1)													
	ELECTRICITY		0.917		0.629**		0.967		0.445		0.845		0.432
	CONSTRUCTION		0.908		0.807*		1.054		0.714		0.877		0.637**
	TRADE		0.817		0.958		0.840		0.796		0.933		0.828
	BUS. SERVICES		1.007		1.008		1.072		1.181		1.165		1.224
Size			1.054		1.025		1.059		0.980		1.008		0.999
Major market (DOMESTIC=1)													
	FOREIGN		0.918		0.981		0.950		0.906		0.911		0.875
c3_1b_Share of permanent full-time			0.948		0.953*		0.941		0.971		1.005		0.976
c2_6a.Domestic demand for your main product/service		1.045	1.016			1.038	0.998	1.105*	1.152*			1.065	1.120
c2_6b.Foreign demand for your main product/service		1.248***	1.176**			1.317***	1.227***	1.293***	1.223***			1.332***	1.287***
c2_6c.Prices of your main product in domestic markets		1.161**	1.105			1.120*	1.112	1.063	1.021			0.973	0.960
c2_6d.Prices of your main product in foreign markets		1.026	1.115			0.994	1.098	1.145	1.262**			1.073	1.138
nc2_7a.Average productivity per employee				0.973	0.987	0.897*	0.922			1.050	1.030	0.925	0.888
nc2_7b.Prices (as compared to total costs)				1.049	1.019	1.023	0.972			1.158***	1.121**	1.186**	1.156*
nc2_7c.Other (non-labour) costs (as compared to labour costs)				1.425***	1.463***	1.449***	1.499***			1.515***	1.558***	1.423***	1.490***
r2_p		0.0372	0.0349	0.0307	0.0408	0.0746	0.0820	0.0553	0.0643	0.0407	0.0446	0.0785	0.0927
BIC		1567.0	1141.7	3078.5	2477.8	1421.7	1044.0	1441.5	1050.6	2805.9	2286.7	1347.9	991.0
N		685	476	1372	1091	638	447	650	455	1298	1036	617	434

* p<0.10, ** p<0.05, *** p<0.01

During both periods of analysis there was a significant positive relation between changes in companies' labour costs and changes in foreign demand for their products (Figure 30, Figure 31). Changes in domestic demand were definitely less significant to the labour costs of enterprises in Poland, especially during the second sub-period. Firms representing the construction sector tended to report decreases in total labour costs more frequently than manufacturers²¹. However, the comparative advantage of such sectors as manufacturing or business services appeared to decrease in the second sub-period. Companies' individual characteristics such as size, major market of its activity, the share of permanent full-time workers, had a less significant impact as far as labour costs were concerned.

²¹ The chances of a labour cost decline in the case of construction were approximately 1/3 higher during 2008-2009 compared to manufacturing. This changed in the second period analyzed (Table 5).

Figure 30. Internal determinants (C2.7) of labour costs changes (C2.4b).

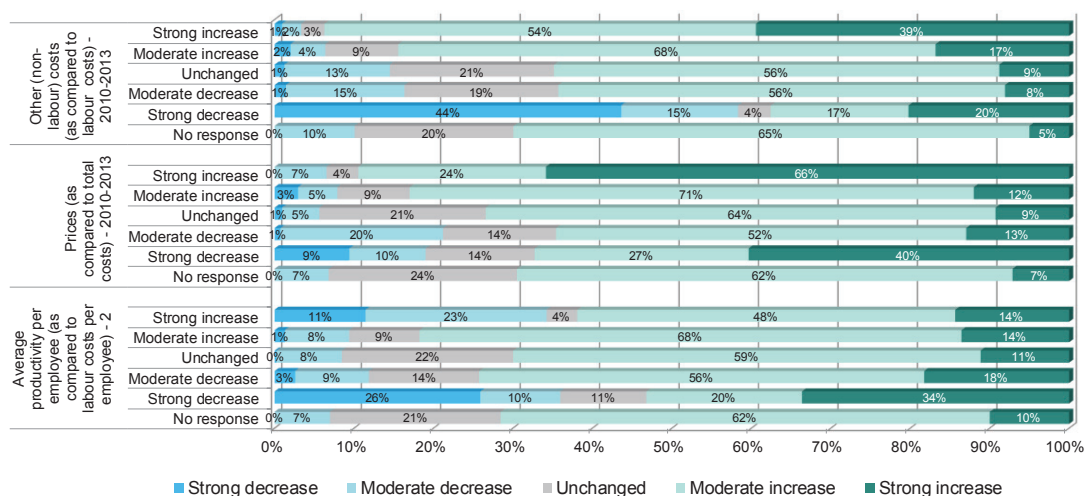
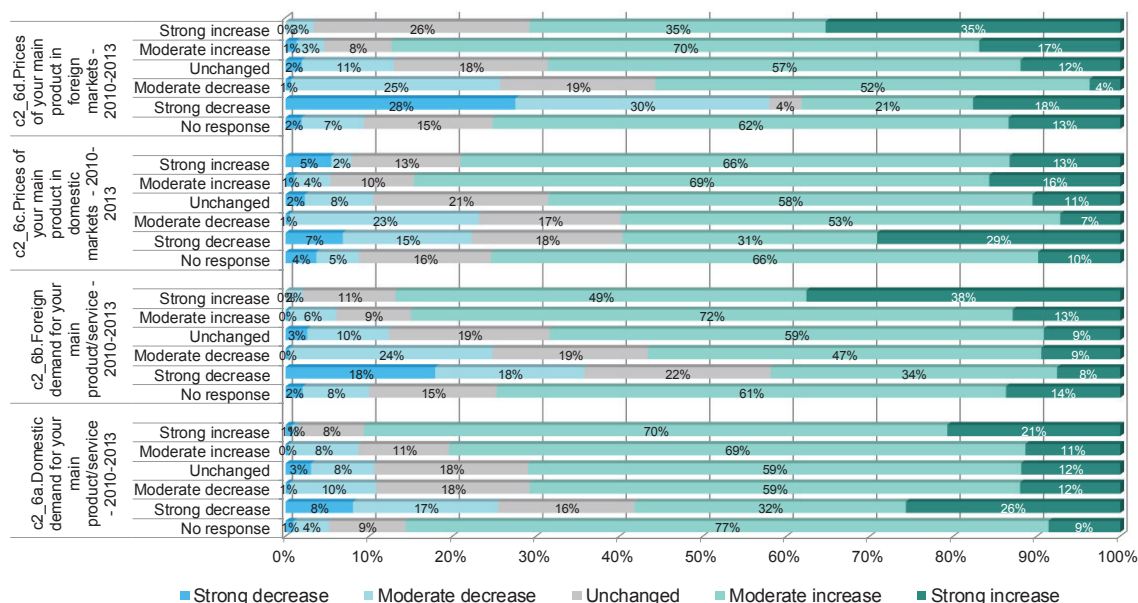


Figure 31. External determinants (C2.6) of labour costs changes (C2.4b).

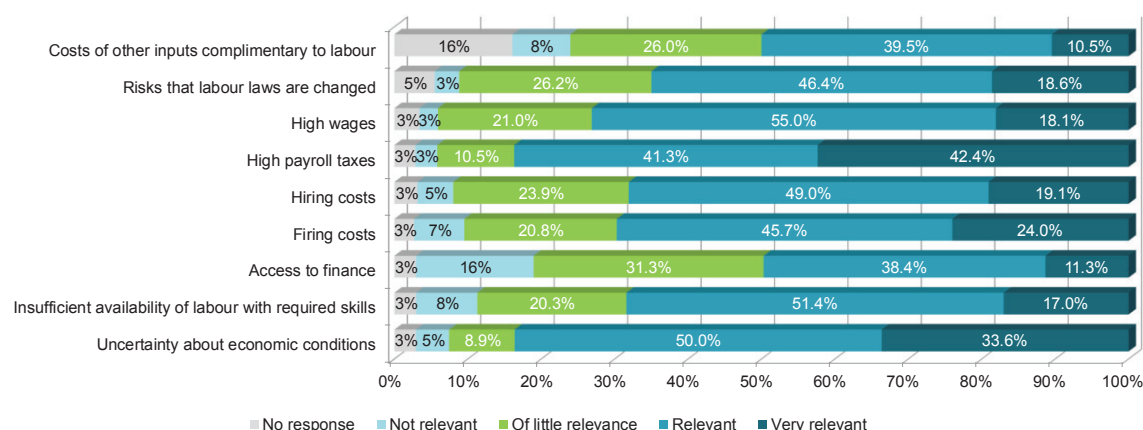


d. Obstacles to hiring

As already mentioned, freezing or reduction of new hires was one of the adjustment measures most eagerly applied by companies (Figure 20). Why did companies in Poland stop or constrain hiring new personnel? Three main obstacles

to hiring employees on permanent contracts were the most likely to be mentioned: **high payroll taxes, uncertainty about economic conditions** and **high wages**. The two first factors were assessed as relevant or very relevant by 84%, the third factor by 73% of companies (Figure 32). In the view of enterprises **the process of hiring didn't change a lot during the period 2010-2013**. The majority (67%) of companies could not see any change in this respect, and almost equal fractions (ca. 11% and 12%) assessed hiring process to have become either easier or more difficult (Figure 23), of which 53% attributed the changes to changes in the labour law or its enforcement²².

Figure 32. C3.5 How relevant is each of the following factors as obstacles in hiring permanent workers?

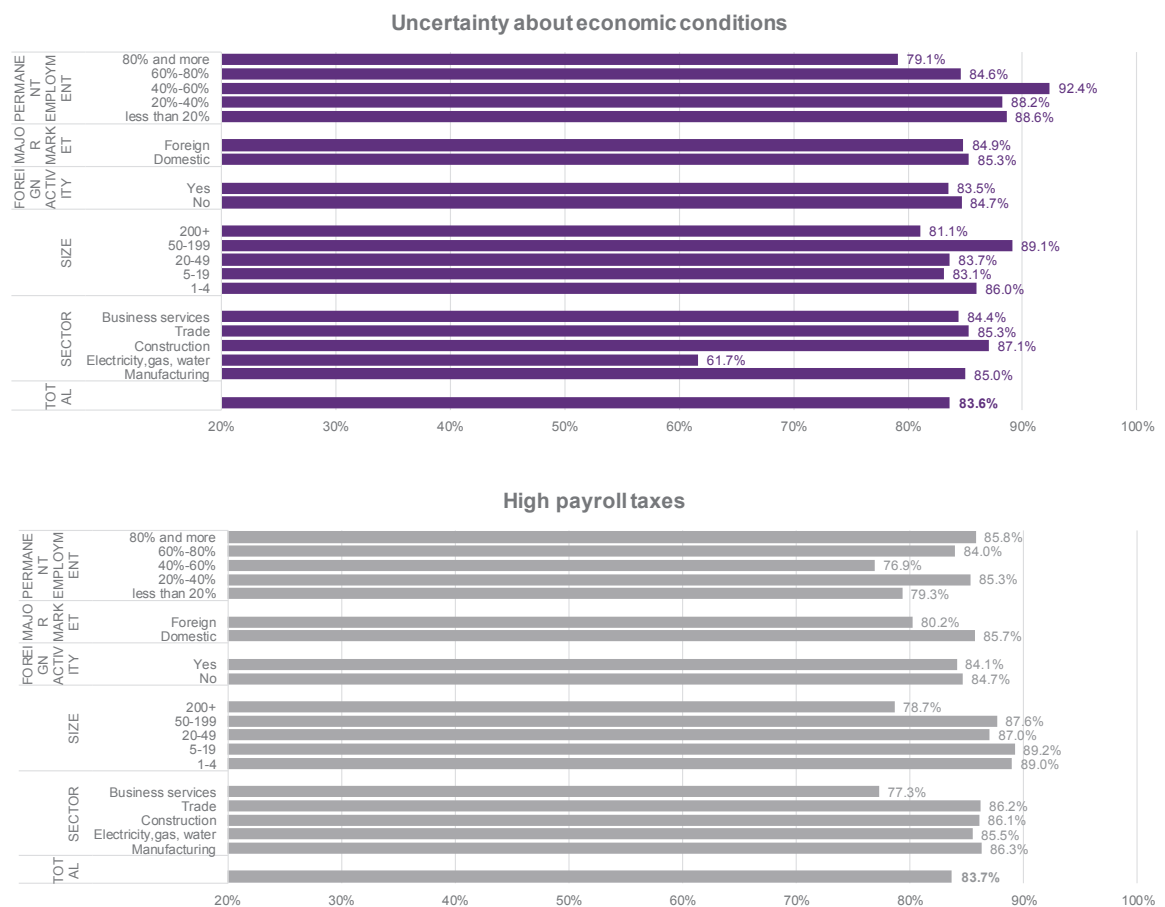


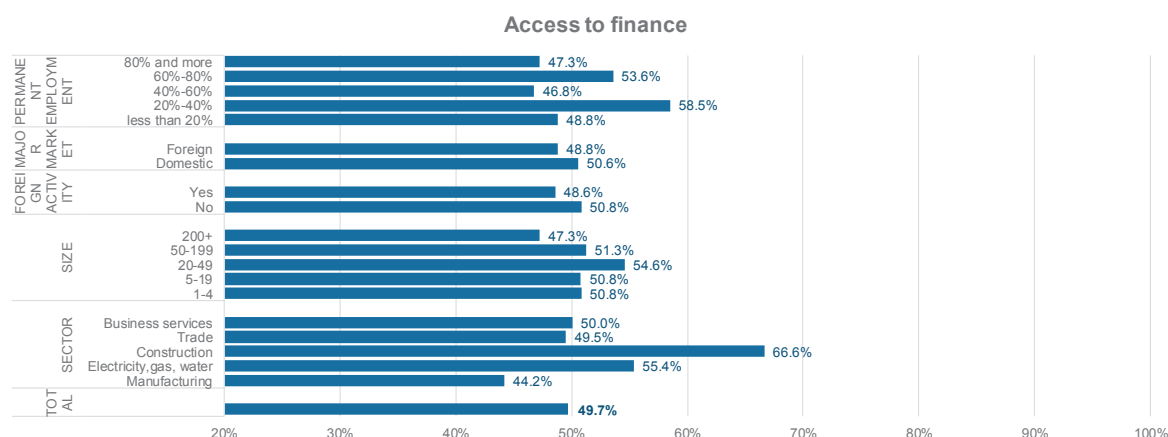
On the other hand, **enterprises assigned the lowest relevance to the access to financing**, where less than half of them deemed this factor to be significant for increasing their permanent employment. The relatively low importance of this factor may result from the relative low share of external financing in the companies' financing structure.

²² However, according to WDN3 survey results for Poland (question no. NC3.4b) recent labour law changes determined to greater extent firing than hiring of new workers, in particular collective layoffs.

As mentioned before, obstacles resulting from the macroeconomic environment such as uncertainty about economic conditions and high payroll taxation were the crucial factor behind the relatively low rate of new permanent hires in the years 2010-2013. The significance of uncertainty (also regarding the risks of labour law changes) increased, on average, with the share of temporary workers, and was the lowest in case of the companies employing exclusively permanent workers. It confirms a **stronger responsiveness of temporary contracts to the changes in economic conditions**. Also a smaller size of enterprises made the hiring decisions more vulnerable to the increasing uncertainty (Figure 33). On the other hand, high payroll taxes were definitely a more decisive factor in case of traditional permanent employment as the tax wedge was here also higher than in case of atypical forms of employment.

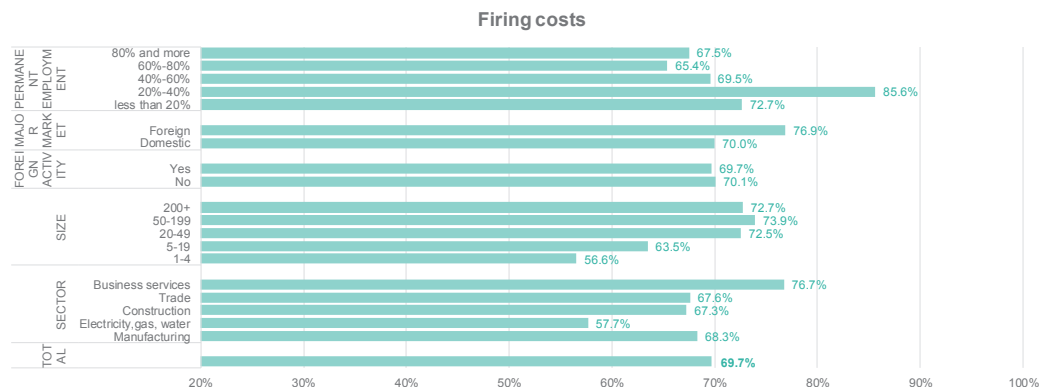
Figure 33. Selected external factors as relevant obstacles in hiring permanent workers (C3.5), in % of firms.

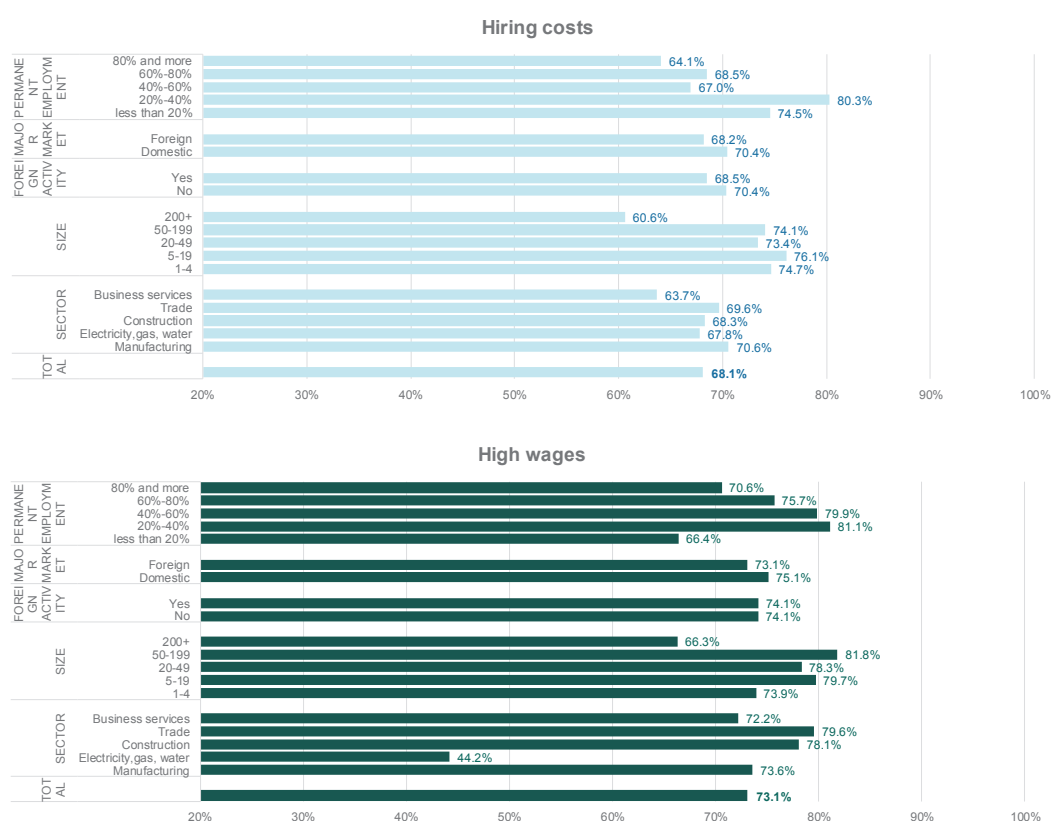




Obstacles to hiring on indefinite contracts were also related directly to the efficiency of labour market functioning (Figure 34). Companies' responses to the questions asked in the questionnaire revealed their motivation why they could not afford hiring for permanent contracts, optionally why they decided to use atypical job contracts. They motivated their attitude first of all by **high wages, but also by high firing and hiring costs**. The relative meaning of those factors for enterprises rose with the growing share of non-permanent workforce. Moreover, firing costs were a significant obstacle rather in larger than in smaller enterprises, in particular in business services, as well as in the firms acting mainly on the foreign market. Too high wages constrained permanent employment predominantly in trade and construction, but in fact didn't influence a lot the choice of contract type in case of the biggest entities.

Figure 34. Selected LM factors as relevant obstacles in hiring permanent workers (C3.5), in % of firms.



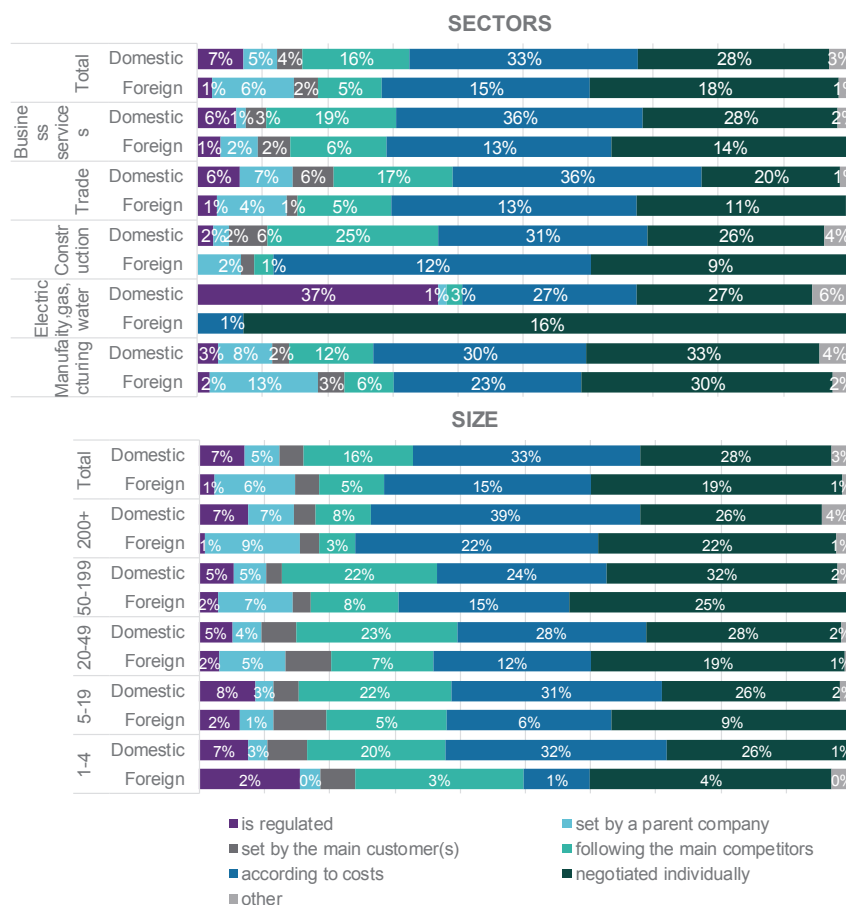


e. Price-setting

In the case of both enterprises acting mainly on the foreign as well as companies oriented on the domestic market two ways of price-setting were dominant. Prices were either negotiated individually or calculated according to the costs, by approximately 2/3 of all enterprises (Figure 35). However, detailed **price-setting patterns of the foreign market oriented companies differed from the patterns used by the companies active mainly on the domestic market**. The highest share of foreign market companies (over 38% of cases) negotiated prices individually. In relatively many of them, i.e. more than 12%, the prices were determined by the parent company. Rather rarely they had to follow their main competitors (merely 10%). A dominant way of price-setting in case of domestic market oriented firms

was price calculation according to the costs born (35%), then individual negotiations (29%) and price strategy following the main competitors (ca. 17%).

Figure 35. nc5.1.How was typically set price of the main product?

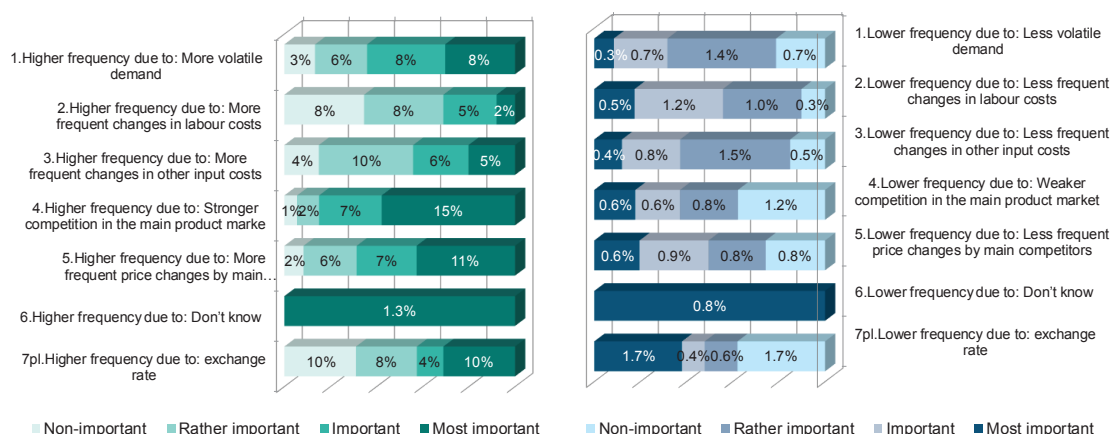


* The category "No response" hidden, percentages do not add up to 100.

No substantial differences were identified across sectors of activity, with the exception of electricity, gas and water supply, as well as building companies acting mainly on the foreign market. In the first case large part of domestic market companies had to accept regulated prices, but practically all foreign market oriented companies negotiated their prices individually. Building firms on the foreign market didn't have to follow prices of their main competitors like their domestic counterparts, but to a much larger extent set the prices according to their cost calculation. In general the significance of cost calculation for price-setting

mechanisms increased with the size and market potential of a company. On the other hand, smaller firms more often had to accept the price level determined by the market makers.

Figure 36. NC5.3a Factors determining frequency of price changes.



* The category "Not applicable" hidden, percentages do not add up to 100.

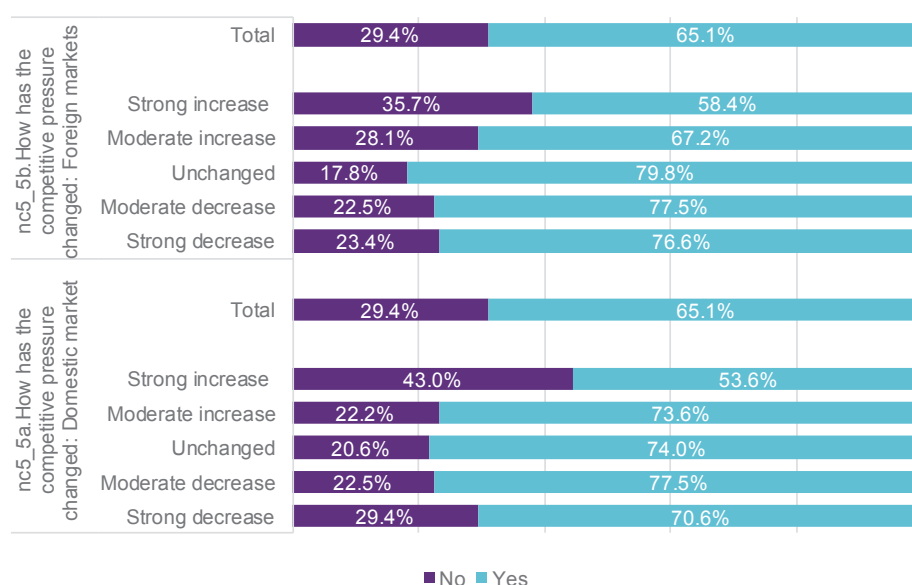
As already mentioned before, the moderate and positive relation between prices set by enterprises and labour costs observed in the period 2008-2009 weakened in the years 2010-2013 (Table 5). Also the frequencies of base wage and price changes were rather weakly correlated with each other²³. Nonetheless, the frequency of price changes was determined, first of all, by the competition on the product market as well as exchange rate changes (Figure 36). However, factors related to competition (level of competition and frequency of price adjustments by the competitors) worked asymmetrically, their higher intensity was likely to increase the frequency of price changes substantially, but lowering their intensity had a remarkably lower impact. Similarly, higher demand volatility was likely to increase the frequency of prices changes, but the price reaction to a lower demand volatility was remarkably

²³ Correlation coefficients between responses about frequencies of prices changes (NC5.6a) and responses to the question concerning wage changes of the main occupational group (C4.6) amounted to 0.11 in the first sub-period and 0.9 in the second period of analysis.

weaker. Contrary to other factors, exchanges rate fluctuations triggered a **symmetric** reaction of product prices, i.e. a similar reaction *in plus* and *in minus*.

In addition, Figure 37 illustrates the reaction of prices to changes in competitive pressure separately for the companies acting mainly on the domestic and separately for the firms oriented on the foreign market activity. Firstly, it confirms the aforementioned asymmetry of price reaction, secondly it indicates that this asymmetry was stronger in case of domestic market.

Figure 37. NC5.3 Did you change the frequency of price changes over 2010-2013, with respect to the period before 2008?



* The category "Not applicable" hidden, percentages do not add up to 100.

5. Conclusions

The WDN 2014 survey was designed to ask entrepreneurs directly about the impact of the recent crisis on the firms' wages and employment adjustment. The main findings of the analysis performed on the basis of the collected information were confronted with the initial knowledge about the macroeconomic processes and labour market reforms in Poland.

The results of the survey appeared to be consistent with the findings of earlier surveys regarding the flexibility of Poland's labour market. In particular, the recent and previous rounds of the WDN survey suggest that labour regulations and labour institutions played a relatively minor role in both employment and wage setting decisions. What is also important, a significant part of the workforce consists of temporary contracts, civil law contracts and self-employment. All these non-standard types of employment reduce the risk and costs of adjustment for employers but weaken the position of employees in wage negotiations. The flexibility of wage adjustment is also linked to a very low extent of wage indexation and an effective use of flexible wage components. Since the previous round of WDN survey in 2007 the impact of the introduced reforms on the labour market was very limited. The majority of firms did not perceive any changes in their ability to adjust labour costs, in consequence of the reforms.

The results of the WDN 2014 survey show that Poland experienced two episodes of slowdown – in 2009 and in 2012-2013, with an interim recovery in between. The negative impulse came in both periods from the demand side and transformed later into a lower customers' ability to pay and a higher level of uncertainty. However, the roots of the first wave of the slowdown were mainly external, while during its second wave demand conditions deteriorated for domestically oriented companies mostly, and the slowdown itself was more extended in time.

In the first sub-period, negative consequences of the economic slowdown were mainly reported by the manufacturing sector, as this sector largely absorbed the external shock (mainly 'imported' from Germany). However, already during the period 2010-2013 the recovery affected mainly companies acting on the foreign market, in particular manufacturers. The domestic market oriented companies experienced only a moderate slowdown in demand in 2009 but in the years 2012-2013 those companies were already exposed to the domestic shock. This shock was observed mainly in the construction sector that experienced a rapid drop in demand and severe cash flow difficulties. The slowdown in demand was also

observed in the trade sector and some of its repercussions were also observed in business services. A detailed year-by-year analysis indicates that the slowdown might have been also transmitted from the medium and large companies, who first bore the cost of adjustment, towards smaller and micro enterprises.

With time, due to higher uncertainty, falling demand, and in effect also lower customers' ability to pay, firms started to perceive shocks influencing their business activity as more persistent in comparison to the first crises episode. This change in the firms' view was observed especially in the construction sector.

The macro data suggest that the adjustment in the case of both the 2009 and 2012-2013 slowdowns went mainly through a sharp decrease in the nominal wage dynamics and only to a lesser extent through employment reductions. The results of WDN 2014 comply with this observation by showing that the performance of the enterprises in each sector was clearly correlated with the level of flexible wage components. The incidence of wage freezes and wage cuts was also correlated with the firm's performance and rather rare in manufacturing where the slowdown in 2009 was deep but relatively short.

According to the results of WDN 2014, no significant changes in financing conditions occurred in Poland's enterprise sector as a consequence of the global crisis. It is despite the fact that the crisis was initially observed mainly in the financial sector and the Polish banking sector dominated by foreign-owned banks. The relatively low importance of financial constraints is also confirmed by the results of other enterprise surveys carried out by the NBP. Companies do not acknowledge this to be an important factor in making decisions about the layoffs. However, difficulties in crediting the firms' usual activity have been noted even by companies that were not directly influenced by any negative demand shock. What is also important, most of firms that declared worsening of the access to external financing considered this as permanent. More strict regulations regarding mortgage

loans that were introduced in 2012 and 2013 also indirectly influenced the demand side in the construction sector.

Most of the firms in Poland set their prices based upon the main competitors' price. Other frequent answers were: according to costs or by individual negotiations. It means that the total costs were only one of the factors, albeit an important one. According to the WDN 2014 results changes in the frequency of price changes were usually a reaction to the behaviour of competitors and less frequently an effect of labour cost changes.

Moving to on the role of exchange rate fluctuations, the stabilization of the EUR/PLN exchange rate after 2009 was mentioned as the most important reason for decreasing the frequency of price changes by exporting companies. At the same time the significant exchange rate volatility was reported to be relevant, but not the most important reason for the higher frequency of price adjustments.

This report is the first attempt at presenting the aggregated results of the WDN 2014 survey in Poland. Furthermore, more advanced analyses still should be done in order to fully exploit the collected information.

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Annex 1. WDN 2014 questionnaire – Polish version

Questionnaire WDN 2014 (translated from Polish)

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 of two previous waves (2007, 2009). The survey constitutes an integral part of a ESCB project on wage dynamics, involving the Central banks of the euro area and of other EU countries, and is conducted through a harmonized questionnaire.

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 only 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 CEO of the company or the Human Resource Manager and is organised in 4 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 xx 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, however, is to investigate changes in practices following the financial crisis, most questions, however, refer to practices applied in the period between 2008-2013/2010-2013.

The aim of each section is explained and questions contain instructions. Further definitions were needed are presented in the Appendix.

iii) Contacts and help: You can send the required information either by fax (....) or by email (...), possibly by the end of In case you need any information or clarification, you can contact

C1. Information about firm			
C1.1 – What is your main sector of activity? (Please refer to PKD 2007)			
C1.2 –What was the first year of operation of your firm?			
C1.3- What was the structure, ownership status and autonomy of your firm at the end of 2013?			
<u>Corporate structure</u> Single establishment firm ☐ Multi-establishment firm ☐ Ownership: Mainly domestic ☐ Mainly foreign ☐	<u>Autonomy in decisions:</u> Parent company ☐ Subsidiary/affiliate (if not independent) ☐		
Please leave the answers to the questions about period 2008-2009 blank if the company started operation after 2009 (according to declaration in the question C 1.2)			

C2. Changes in the economic environment							
This section aims at assessing the main changes in economic environment your firm suffered during 2008-2009 and 2010-2013 . When answering the questions please refer to "the most significant changes" taking place over this period.							
C2.1 –How did the following factors affect your firm's activity during 2008-2009 and 2010-2013? Please choose ONE option for each line							
			<i>Strong decrease</i>	<i>Moderate decrease</i>	<i>Unchanged</i>	<i>Moderate increase</i>	<i>Strong increase</i>
The level of demand for your products/services	2008-2009	☐	☐	☐	☐	☐	
	2010-2013	☐	☐	☐	☐	☐	
Volatility/uncertainty of demand for your products/services	2008-2009	☐	☐	☐	☐	☐	
	2010-2013	☐	☐	☐	☐	☐	
Access to external financing through the usual financial channels	2008-2009	☐	☐	☐	☐	☐	
	2010-2013	☐	☐	☐	☐	☐	
Customers' ability to pay and meet contractual terms	2008-2009	☐	☐	☐	☐	☐	
	2010-2013	☐	☐	☐	☐	☐	
Availability of supplies from your usual suppliers	2008-2009	☐	☐	☐	☐	☐	
	2010-2013	☐	☐	☐	☐	☐	
C2.2 – For those factors which affected your firm strongly (answer in C2.1 – strong decrease/strong increase), were the effects transitory, partly persistent or long-lasting. Please answer for the periods 2008-2009 and 2010-2013 (chosed one answer in each line)							
		<i>Transitory</i>	<i>Only partly persistent</i>	<i>Long-lasting</i>			

The level of demand for your products/services	2008-2009	☐	☐	☐
	2010-2013	☐	☐	☐
Volatility/uncertainty of demand for your products/services	2008-2009	☐	☐	☐
	2010-2013	☐	☐	☐
Access to external financing through the usual financial channels	2008-2009	☐	☐	☐
	2010-2013	☐	☐	☐
Customers' ability to pay and meet contractual terms	2008-2009	☐	☐	☐
	2010-2013	☐	☐	☐
Availability of supplies from your firm's usual suppliers	2008-2009	☐	☐	☐
	2010-2013	☐	☐	☐

C2.3 – With regard to finance, please indicate for 2010-2013 how relevant were for your firm each one the following happenings? Please choose ONE option for each line. Note: credit here refers to any kind of credit, not only bank credit

		<i>Not relevant</i>	<i>Of little relevance</i>	<i>Relevant</i>	<i>Very relevant</i>
Credit was not available to finance working capital	2008-2009	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐
Credit was not available to finance new investment	2008-2009	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐
Credit was not available to refinance debt	2008-2009	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐
Credit was available to finance working capital, but conditions (interest rate and other contractual terms) were too onerous	2008-2009	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐
Credit was available to finance new investment, but conditions (interest rate and other contractual terms) were too onerous	2008-2009	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐
Credit was available to refinance debt, but conditions (interest rate and other contractual terms) were too onerous	2008-2009	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐

C2.4 – How did these components of total costs evolve during 2008-2009 and in 2010-2013? Please choose ONE option for each line (See definitions in the Appendix)

		<i>Strong decrease</i>	<i>Moderate decrease</i>	<i>Unchanged</i>	<i>Moderate increase</i>	<i>Strong increase</i>
Total Costs	2008-2009	☐	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐	☐
Labour Costs	2008-2009	☐	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐	☐
Financing costs	2008-2009	☐	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐	☐
Costs of supplies	2008-2009	☐	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐	☐
Other costs (please specify _____)	2008-2009	☐	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐	☐

C2.6 - How did prices and demand for your main product evolve during 2008-2009 and 2010-2013? Please choose ONE option for each line. In case you do not export please leave lines for foreign markets blank.						
		Strong decrease	Moderate decrease	Unchanged	Moderate increase	Strong increase
Domestic demand for your main product/service	2008-2009	☐	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐	☐
Foreign demand for your main product/service	2008-2009	☐	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐	☐
Prices of your main product in domestic markets	2008-2009	☐	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐	☐
Prices of your main product in foreign markets	2008-2009	☐	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐	☐

NC2.7 - How did the following factors evolve in your firm during (2008-2009 and 2010-2013)? Please choose ONE option for each line						
		Strong decrease	Moderate decrease	Unchanged	Moderate increase	Strong increase
Average productivity per employee (as compared to labour costs per employee)	2008-2009	☐	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐	☐
Prices (as compared to total costs)	2008-2009	☐	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐	☐
Other (non-labour) costs (as compared to labour costs)	2008-2009	☐	☐	☐	☐	☐
	2010-2013	☐	☐	☐	☐	☐

NC2.8 – Has your firm off-shored (move abroad) or out-sourced (contracted out) the part of their activity during the period 2010-2013?	
<u>Offshored</u>	
Yes	☐
No, but it was considered	☐
No and we did not consider it	☐
<u>Outsourcing</u>	
Yes	☐
No, but it was considered	☐
No and we did not consider it	☐

NC2.9 – In which years did the most significant NEGATIVE shocks take place? Please choose as many years as applicable.							
	2008	2009	2010	2011	2012	2013	No negative shock took place
Level of demand for your products/services	☐	☐	☐	☐	☐	☐	☐
Volatility/uncertainty of demand for your firm's products/services	☐	☐	☐	☐	☐	☐	☐
Access to external financing needed for financing your firm's usual activity	☐	☐	☐	☐	☐	☐	☐
Customers' ability to pay and meet contractual terms	☐	☐	☐	☐	☐	☐	☐
Access to supplies from your firm's usual suppliers	☐	☐	☐	☐	☐	☐	☐

C.3. Labour force adjustments

The aim of that part is to collect information regarding changes in employment level and structure that occurred in the period 2010-2013 in reaction to the changes in economic environment

C3.1. – How many employees did your firm have on the payroll at the end of 2013? How many agency workers and others workers did your firm have at the end of 2013? (For detailed definitions see Appendix)?

Total number of employees on the payroll _____ <u>Of which</u> Permanent full-time: _____ Permanent part-time _____ Temporary or fixed-term: _____	Total number of agency workers and others whose employment is not included in labour costs (example civil law contracts): _____
--	---

C3.2 –At the end of 2013, how were your firm's employees approximately distributed by occupational group or tenure? (See definitions of the ISCO occupational groups and the definition of tenure in the Appendix)

OCCUPATIONAL GROUPS		JOB TENURE (with current employer)	
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 Since 2010, did you need to significantly reduce your labour input or to alter its composition?

Need to reduce labour cost or alter its composition	YES ☐	NO ☐
---	------------------------------	-----------------------------

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	☐	☐	☐	☐

C3.4a – Have any of the following actions become more or less difficult in 2013, compared to the situation in 2010? Please choose ONE option for each line

	<i>Much less difficult</i>	<i>Less difficult</i>	<i>Unchanged</i>	<i>More difficult</i>	<i>Much more difficult</i>
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 incumbents employees	☐	☐	☐	☐	☐
To lower wages at which you hire new employees	☐	☐	☐	☐	☐

C3.3.b – If YES in the question C3.3a, which of the following measures did you use to reduce your labour input or alter its composition when it was most urgent? Please choose an option for each line. See definitions in the appendix.

	<i>Not at all</i>	<i>Marginally</i>	<i>Moderately</i>	<i>Strongly</i>
Collective layoffs	☐	☐	☐	☐
Individual layoffs	☐	☐	☐	☐

NC3.4b. ONLY FOR THOSE REPORTING CHANGES IN C3.4 – To what factors would you attribute the changes reported in Question C3.4? Please choose ONE option for each line

	<i>Reforms of labour laws</i>	<i>Jurisprudence/ law enforcement</i>	<i>Changes in trade unions behaviour</i>	<i>Changes in individual behaviour</i>
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 (costs 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 incumbents employees	☐	☐	☐	☐

C3.5- How relevant is each of the following factors as OBSTACLES in hiring workers with a permanent, open-ended contract? Please choose <u>ONE</u> option for each line.				
	Not relevant	Of little relevance	Relevant	Very relevant
Uncertainty about economic conditions	☐	☐	☐	☐
Insufficient availability of labour 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 _____)	☐	☐	☐	☐

NC3.6a – Compared to 2010, worker flows in your firm (entries plus exits) in 2013				
Decreased strongly	Decreased moderately	Unchanged	Increased moderately	Increased strongly
☐	☐	☐	☐	☐

NC3.6b – If you answered that worker flows changed strongly (increased or decreased), this was mostly due to:		
Changes in entries (increase or decrease)	Changes in exits (increase or decrease)	Changes in both entries and exits
☐	☐	☐

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 2008 and 2010-2013. See Appendix for definitions.

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 in the Appendix)

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?

Flexible elements related to performance as percent of wage bill _____ %

C4.3a- In 2013, did your firm apply a collective pay agreement bargained and signed inside of the firm (at the firm level) ? and signed outside of the firm (at the 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	☐	☐
If YES above, proportion of employees covered by such an agreement (approx.)	_____ %	_____ %

C4.3b- What is the proportion of your employees covered in 2013 by <u>any</u> collective pay agreement?	
NO, there is no agreements	☐
YES, at least one agreement exists	☐
If YES above, proportion of employees covered by such an agreement (approx.)	_____ %

C4.4 – If in the question C4.3a answer YES, how often does the collective pay agreement applied at you firm typically change?					
More than once a year	☐	Between one and two years (including once a year)	☐	Once every two years or less frequently	☐

C4.5 – Did your firm adapt changes in base wages to inflation before 2010 and after 2010 roku?			
Definition of base wage - direct remuneration excluding bonuses			
	Before 2010		After 2010
YES	☐	YES	☐
NO, Inflation was too low so that indexation rules were no operative	☐	NO, Inflation was too low so that indexation rules were no operative	☐
NO, There were no legal or other types of indexation rules specifying such an adjustment	☐	NO, 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 (largest group in Question C3.2) typically changed in your firm? Please choose ONE option for each line					
	More than once a year	Once a year	Between one and two years	Every two years or less frequently	Never/Not applicable
In the period 2010-2013	☐	☐	☐	☐	☐
Before 2010.	☐	☐	☐	☐	☐

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 in any year
	YES	% Workers affected	YES affected	% Workers affected	(average wage cut)	
2010	☐	_____ %	☐	_____ %	(_____ %)	☐
2011	☐	_____ %	☐	_____ %	(_____ %)	
2012	☐	_____ %	☐	_____ %	(_____ %)	
2013	☐	_____ %	☐	_____ %	(_____ %)	

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
During 2010-2013	☐	☐	☐	☐	☐
Before 2010	☐	☐	☐	☐	☐

C5. Price setting and price changes

This section collects information on price setting and the frequency of price changes. Most of the questions refer to the year 2013 but some questions aim at assessing differences in (2010)-2013 with respect to the period before 2008 (before the first wave of economic slowdown).

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".

NC5.1 – In 2013, how was typically set the selling price of your main product, activity or service in its main market (both domestically and internationally)? Please choose ONE single option

	Domestic markets	Foreign markets
There is no autonomous price setting policy because:		
- the price is regulated	☐	☐
- the price is by a parent company / group		
- the price is set by the main customer(s)	☐	☐
The price is set following the main competitors	☐	☐
The price is set fully according to costs and a completely self-determined profit margin	☐	☐
Negotiated with individual customers	☐	☐
Other (please specify _____)	☐	☐
There is no autonomous price setting policy because:	_____	_____

NC5.2 – In 2013 what share of the revenues from your firm's main products, activity or service was due to sales in domestic markets and what share in foreign markets there is also division? All fields should sum up to 100%

	Transactions settled in PLN	Transactions settled in foreign currencies (EUR, US dollars, etc.)
Sales in the domestic market	____%	____%
Sales in the foreign markets	____%	____%

NC5.3. Over 2010-2013, did you change the frequency of price changes with respect to the period before 2008?

YES (go to C5.3a or C5.3b)	☐	NO (go to C5.4)	☐
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NC5.3a – If recently you changed prices more frequently, higher frequency because of:

Please attach a ranking in order of importance to the factors listed below (0 non important to 3-most important)

More volatile demand	0 1 2 3
More frequent changes in labour costs	0 1 2 3
More frequent changes in other input costs	0 1 2 3
Stronger competition in the main product market	0 1 2 3
More frequent price changes by main competitors	0 1 2 3
Larger or more frequent fluctuations in the PLN exchange rate having a direct impact on the selling price	0 1 2 3
Don't know	☐

NC5.3b – If recently you changed prices less frequently, lower frequency because of:

Please attach a ranking in order of importance to the factors listed below (0 non important to 3-most important)

Less volatile demand	0 1 2 3
Less frequent changes in labour costs	0 1 2 3
Less frequent changes in other input costs	0 1 2 3
Weaker competition in the main product market	0 1 2 3
Less frequent price changes by main competitors	0 1 2 3
Stabilization of the PLN exchange rate having a direct impact on the stability of sales prices	0 1 2 3
Don't know	☐

NC5.4 – How would you characterise the degree of competition in the main markets for your main product? Please choose a single option for each line

	<i>Weak</i>	<i>Moderate</i>	<i>Severe</i>	<i>Very severe</i>	<i>Non applicable</i>
Domestic markets	☐	☐	☐	☐	
Foreign markets	☐	☐	☐	☐	

NC5.5 – Compared to the situation before 2008, how has the competitive pressure on your main product's main market changed in the period 2010-2013? Please choose ONE option for each line

	<i>Strong decrease</i>	<i>Moderate decrease</i>	<i>Unchanged</i>	<i>Moderate increase</i>	<i>Strong increase</i>	<i>Not applied</i>
Domestic markets	☐	☐	☐	☐	☐	☐
Foreign markets	☐	☐	☐	☐	☐	☐

NC5.6 How and how often did you typically change the price of your main product?

Please choose a single option, the one that best describes the situation in your firm in the period 2010-2013

<i>ON A REGULAR</i>	<i>WHENEVER COSTS and/or DEMAND CONDITIONS</i>
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<i>TIME PATTERN</i>		<i>CHANGED</i>
		<i>(please select in this case the most typical frequency change)</i>
More frequently than 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		☐

Annex 2. Main labour market reforms in Poland (2008-2013)

Table A2. Short description of the main labour market reforms introduced in Poland in the period 2008-2013.

The aim of the measure	Detailed description of the measure	Implementation date	Temporary or permanent	End date (temporarily)
IMPORTANT REGULATIONS INTRODUCED SHORTLY BEFORE THE CRISIS				
Reduction of tax wedge	Reduction of tax wedge covers: a) a two-stage (2007 and 2008) reduction of disability contributions in total by 7 basis points (from 13% to 6%), b) restoration (2007) of the indexation of tax thresholds in PIT, the tax-free amount and revenue-earning costs, c) introduction (in 2009) of two personal income tax (PIT) rates 18% and 32% instead of three 19%, 30% and 40% before the change. Again in February 2012 the government increased disability contributions from 6% to 8% to be financed by employers in order to balance its budget.	2009-01	Permanent	-
End of early pension entitlements	Since 1st January 2009 women under the age of 55 and men under the age of 60 were no longer eligible for early pension entitlements (it means that they had to wait 5 years until the statutory retirement age). As the exemption the so called "bridging pensions" were introduced for persons that started work before 1999 and have at least 15 years of job seniority in special conditions or character.	2009-01-01	Permanent	-
Increase of the labour force participation of persons 50+	Governmental Programme 50+ Solidarity between generations, encouraging people at risk of unemployment and social exclusion to be more active in the labour market.	2008-10-01	Temporary	2020
DIRECTLY RELATED TO THE CRISES				
Support for companies affected by the crisis	Reimbursable financial support (i.e. loans and guarantees) of the Industrial Development Agency for crucial undertakings, which was expected to stimulate the national economy, addressed, in particular, to medium and large enterprises operating in the security and defence sector.	2009-05	Temporary	2010-12
Programme of supporting SMEs by granting them governmental loans and guarantees.	Programme of supporting SMEs by granting them governmental loans and guarantees.	2009-02-01	Temporary	gru-13
Government Program for Exports Support	Government loans for financing purchases of Polish goods and services to foreign importers.	2009-07-01	Permanent	-

Anti-crisis package - the measures regarding employment	Introduction of flexible working-time solutions such as the extension of the reference period for working time to 12 months, greater freedom of employers in organizing work and calculating working time, in particular flexible working hours for parents taking care of children under the age of 14; on the other hand, restricting employment in the area of temporary job contracts up to 24 months in total length; in the case of crises-stricken companies: topping up wages by the budget during periods of suspended production to maintain the existing jobs, subsidizing job trainings and post-graduate studies, tax exemption of social assistance provided to employees by employers and labour unions (part of the Anti-Crises Package)	2009-08	Temporary	2011-12
Facilitating the hiring of workers by the temporary work agencies	Facilitating the hiring of workers provided by the temporary work agencies by increasing the maximum length of a job contract from 12 to 18 months.	2009	Permanent	
Support for persons that lost jobs but have to service their mortgage loans	Public support for the unemployed in servicing their mortgage loans after fulfilment of certain conditions, to be repaid within 8 years starting 2 years after the last subsidy payment (part of the Anti-Crises Package)	2009-08	Temporary	2011-12
IMPORTANT BUT NOT DIRECTLY RELATED TO THE CRISES				
Unemployment benefits decreasing with time on unemployment	Since January 2010 new regulations governing the length of unemployment benefit payments have been in place aimed to rationalize the system. Instead of a flat benefit rate paid during the whole period, now, payments are higher in the first 3 month after the registration and then decrease by about 21%. The maximum period of payments has been reduced from 18 to 12 months but the minimum period remained unchanged (6 months).	2010-01	Permanent	-
Reduction of expenditures on ALMP	Cutting the Labour Funds' expenditures on active labour market policies (ALMPs) by more than 50% in 2011 as compared to 2010, from approx. 0.5% of GDP in 2010 to 0.2% of GDP in 2011 - as a consequence of budgetary discipline. The cuts were applied to almost all the items of this spending category. The highest reduction was foreseen for the reimbursement of new job equipment costs and the support for setting up a new business, training schemes and financial support during internship. As of August 2012 additional funds have been released to finance internships for youth unemployed, but the funds still amounted to about 20% of what has been allocated to ALMPs in 2009. In the recent budget proposal for 2013 the government decided to continue with the surplus, but increased the allocation for ALMPs to about 50% of the available resources. This will yield a 25% increase as compared to 2012.	2011	Temporary	2013

Annex 2

Gradual increase of the retirement age until 2040	The statutory retirement age in Poland will be gradually raised, following to the reform adopted by the Parliament earlier this year. Current age levels of 60 for women and 65 for men are previewed to reach 67 for both genders in 2040. Aimed at mitigating the effects of unfavourable demographic changes (esp. aging).	2013	Permanent	-	
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Annex 3. The proportions of firms in the sample and in the total population

Table A3. *The stratification of the final sample by sectors and sizes of firms vs. the proportions in the population* (the percentages sum up to 100% in columns)*

Strata defined by sector and size		Proportions of strata in the sample		Proportion of strata in the population	
Sector	Size	No. of firms	Employment	No. of firms	Employment
B+D+E	1-49	0.5%	0.1%	0.7%	0.7%
C	1-9	3.9%	0.1%	10.3%	2.7%
F	1-9	3.1%	0.1%	14.5%	2.8%
G	1-9	13.3%	0.4%	32.3%	6.7%
H	1-9	2.0%	0.1%	8.9%	1.6%
I	1-9	1.2%	0.0%	3.1%	0.9%
J	1-9	0.9%	0.0%	4.6%	0.5%
L	1-9	2.4%	0.1%	2.6%	0.4%
M	1-9	4.4%	0.1%	14.4%	1.7%
N	1-9	1.7%	0.1%	3.7%	0.5%
C	10-49	7.7%	1.7%	1.0%	4.8%
F	10-49	4.1%	0.9%	0.5%	2.3%
G	10-49	10.8%	2.0%	1.2%	5.1%
H	10-49	2.4%	0.6%	0.2%	1.1%
I	10-49	1.8%	0.4%	0.1%	1.4%
J	10-49	1.0%	0.2%	0.1%	0.5%
L	10-49	1.0%	0.2%	0.1%	0.5%
M	10-49	1.6%	0.3%	0.2%	0.9%
N	10-49	1.0%	0.2%	0.1%	0.6%
B+D+E	50-249	1.2%	1.8%	0.1%	1.4%
C	50-249	12.5%	15.9%	0.4%	10.4%
F	50-249	2.2%	2.0%	0.1%	2.0%
G	50-249	4.8%	4.6%	0.2%	4.5%
H	50-249	2.1%	2.2%	0.1%	1.3%
I	50-249	0.7%	0.6%	0.0%	0.4%
J	50-249	0.5%	0.5%	0.0%	0.6%
L	50-249	0.3%	0.4%	0.0%	0.7%
M	50-249	0.5%	0.5%	0.0%	1.0%
N	50-249	0.9%	0.9%	0.0%	1.1%

B+D+E	250+	0.6%	3.0%	0.0%	4.7%
C	250+	5.9%	35.4%	0.1%	15.7%
F	250+	0.6%	4.6%	0.0%	1.6%
G	250+	0.5%	4.6%	0.0%	6.7%
H	250+	1.2%	7.8%	0.0%	4.8%
I	250+	0.1%	3.4%	0.0%	0.4%
J	250+	0.2%	1.3%	0.0%	1.6%
L	250+	0.1%	0.4%	0.0%	0.2%
M	250+	0.1%	1.1%	0.0%	1.5%
N	250+	0.3%	1.3%	0.0%	3.6%

*The data about the population based on the publications of the GUS (GUS, 2014a, 2015)

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