



# LABOUR MARKET ADJUSTMENT AND LABOUR MARKET REFORMS IN GREECE DURING THE CRISIS: FINDINGS FROM THE THIRD WAVE OF THE WAGE DYNAMICS SURVEY\*

Theodora Kosma

Evangelia Papapetrou

Georgia Pavlou

Christina Tsochatzi

Pinelopi Zioutou

Economic Analysis and Research Department

## I INTRODUCTION

The recession that followed the global financial crisis and the sovereign debt crisis resulted in large falls in output (GDP) and rises in unemployment across Europe. The large rises in unemployment led many countries to proceed to significant labour market reforms. In this context, the European System of Central Banks (ESCB) conducted a third wave of the Wage Dynamics Network (WDN3) survey in 2014-2015.<sup>1</sup> The aim of the survey was to investigate how firms adjusted to the shocks affecting them and to what extent, according to their perceptions, labour market reforms made it easier for them to adjust labour input and wages.<sup>2</sup> In Greece, the third wave of the survey was conducted in the second half of 2014 and the beginning of 2015.

This paper summarises the main findings of the Greek WDN3 survey. The results show that the decline in economic activity, during the period 2010-2013, had a significant negative impact on firms' activity and firms reacted to the shocks affecting them by adjusting both labour input and wages. The share of firms adjusting wages in Greece is the highest among the countries participating in the WDN3 survey. Furthermore, reforms seem to have made it easier for firms to adjust to the shocks affecting them. A significant share of firms report that it is now easier for them to adjust labour input and wages and attribute this flexibility mainly to the reform of labour laws. Regarding remaining inflexibilities in the Greek labour market and

other obstacles that would influence the hiring of new employees with contracts of indefinite length, the survey shows that Greek firms consider economic uncertainty to be comparatively the most binding obstacle to hiring, followed by high payroll taxes. The regulatory framework, which has been significantly reformed in the recent period, is not frequently considered as a relevant obstacle to hiring employees with contracts of indefinite length.

The rest of the paper is organised as follows: Section 2 provides a short description of the main labour market reforms that took place during recent years. Section 3 describes the main features of the survey and the Greek sample. Section 4 describes the main shocks affecting Greek firms. Section 5 discusses how Greek firms adjusted labour input and their wage bill. Section 6 analyses the flexibility provided to firms by the labour market reforms by focusing on firms' perceptions about the effectiveness of reforms. A final section concludes.

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1 Denmark, Finland and Sweden are the only three EU countries which are not covered by the WDN3 survey.

2 This was a follow-up to the two previous WDN surveys carried out in 2007 and 2009. The first wave was carried out in order to collect information on wage-setting practices at the firm level and the second to assess how firms reacted in the aftermath of the financial crisis of 2007-2008. For a summary of the main findings of the first and second wave of the Wage Dynamics Network Survey, see Fabiani et al. (2010) and Fabiani et al. (2015), respectively.

## 2 DEVELOPMENTS IN THE GREEK LABOUR MARKET BETWEEN 2010 AND 2013

The sovereign debt crisis had a significant negative impact on the Greek economy, which registered a cumulative reduction in output of 21% in real terms over the period 2010-2013.<sup>3</sup> This led to an increase in the unemployment rate from 12.7% in 2010 to 27.5% in 2013, with the number of unemployed reaching 1.3 million in 2013 (from 639,400 in 2010). During the same period, employment declined from 4.4 million at the beginning of 2010 to 3.5 million at the end of 2013.<sup>4</sup> The fall in output and the increase in unemployment stand out when compared with the evolution of output and unemployment in the EU and in other southern European countries that were also much affected by the sovereign debt crisis (see Izquierdo et al. 2017). For instance, in Italy GDP fell by 9.4% in the period 2008-2014 and unemployment rose by 6 percentage points (see D' Amuri et al. 2015). In Spain, output fell by 8% between 2010 and 2013 and unemployment rose by 7 percentage points (see Izquierdo and Jimeno 2015 and Izquierdo et al. 2017).

The increase in unemployment and the need to deal with various structural inefficiencies of the Greek labour market led to the adoption of significant labour market reforms. Labour market reforms were aimed at reducing labour costs, as a key to boosting competitiveness, and at increasing the ability of firms to adjust to shocks.<sup>5</sup> The main reforms involved measures that made the wage bargaining system more decentralised and reduced employment protection for permanent employees by lowering firing costs. Also, the setting of the minimum wage was turned over to the government away from the social partners.

With respect to collective bargaining, to increase flexibility and firms' ability to adjust to the decline in economic activity, procedures for the conclusion of firm-level agreements were simplified and firm-level agreements can now allow for remuneration and working conditions that are less favourable than any sec-

toral/occupational agreement. Moreover, in an effort to reduce further the centralisation of wage bargaining, the extension of occupational and sectoral collective agreements to non-signatory parties was suspended.

Finally, recourse to arbitration to solve disputes is allowed only if both parties agree and it is limited to basic pay issues. The new framework for recourse to arbitration aimed at a faster conclusion of agreements.<sup>6</sup> As a result, the number of firm-level agreements has risen significantly. Firm-level agreements have allowed for wage freezes and the downward adjustment of wages of between 10% and 40% (see Bank of Greece 2014).

Regarding firing costs, there was a reduction in severance pay on dismissals without prior notice. The notice period for the termination of employment contracts was also reduced and the minimum threshold for activating rules on collective dismissals increased.<sup>7</sup>

Finally, in the area of the national minimum wage, a new system was introduced. Previously, the minimum wage was the outcome of a bargaining process between the social partners. Following the changes, the minimum wage is set by law after consultation with social partners and sub-minimum wages for workers under the age of 25 apply. Moreover, in 2012, in an attempt to reduce labour costs, a new national minimum wage was legislated, lower by 22% (and 32% for those under 25). This downward minimum wage adjustment along

<sup>3</sup> National accounts, seasonally adjusted data (ELSTAT).

<sup>4</sup> Labour Force Statistics (LFS) (ELSTAT).

<sup>5</sup> For an extended discussion of labour market reforms during the period 2010-2013, see, among others, Bank of Greece, *Annual Report 2011, Annual Report 2012, Monetary Policy – Interim Report 2012*, as well as the European Commission's Labour Market Reforms Database (<https://webgate.ec.europa.eu/labref/public/>).

<sup>6</sup> To further increase the ability of firms to adjust to shocks, some measures that made the adjustment of working hours easier were also introduced. For instance, firms were permitted to extend working hours per day in periods of high employment, on the condition that weekly working hours were reduced at another time (of low employment). Working time cannot, however, deviate from regular hours for more than six months in a period of twelve months.

<sup>7</sup> For dismissals with prior notice the severance pay is half of that for dismissals without prior notice. The reduction in the notice period increases firms' flexibility and reduces firing costs.

with the abolition of various allowances (such as those for the use of computers or foreign language skills) is reflected in the evolution of wage costs, as the index of wages declined from 114.5 in 2009 to 89.9 in 2013.<sup>8</sup>

### 3 SURVEY DESIGN AND DESCRIPTION OF THE GREEK SAMPLE

In Greece, the third wave of the Wage Dynamics Network survey was conducted in the second half of 2014 and the beginning of 2015. The questionnaire was sent to firms with more than 20 employees in the manufacturing, trade and business services sectors.<sup>9,10</sup> The final sample includes 402 firms.

The questionnaire included a set of questions collecting information on:

a) the firm (i.e. ownership structure, number of employees, distribution of employees according to skills and type of employment contract, etc.);

b) the type of shocks affecting firms;

c) whether firms adjusted wages and employment and how this adjustment was achieved (i.e. whether firms had frozen and/or cut wages, flexible wage components, whether they adjusted employment by lay-offs, adjustment of hours, freeze of new hires, non-renewal of temporary contracts, etc.);

d) the effectiveness of reforms by asking firms whether they perceived it easier or more difficult to adjust employment and wages in 2013 compared to 2010;

e) firms' price-setting strategies and whether price-setting strategies changed during the crisis.

Looking at the composition of our sample, almost 70% of firms have between 20 and 200 employees. A significant share of firms though (19%) are firms with more than 200 employees (see Chart 1). As to the sectoral coverage, the sample is almost evenly split among manufac-

Chart 1 Distribution of sample by firm size

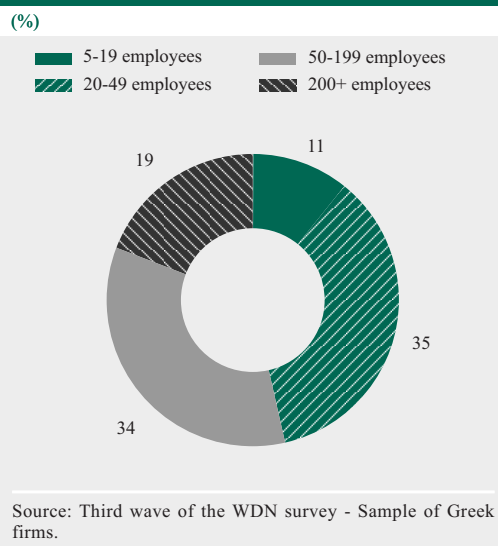
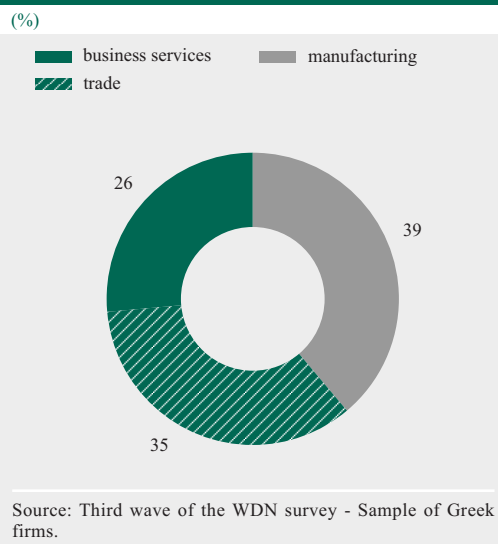


Chart 2 Distribution of sample by sector



<sup>8</sup> ELSTAT, Index 2012=100.

<sup>9</sup> As in the previous two waves, the countries conducting the survey used a harmonised questionnaire that contained a core set of questions asked in all countries and a set of non-core questions asked only in some of them. The harmonised design of the survey allows the creation of a cross-country dataset that provides comparable information on firms' adjustment during the crisis.

<sup>10</sup> Since firms adjusted their labour input during the crisis, the sample also includes some firms with less than 20 employees. The sample does not include the financial sector. The survey was conducted by email and the response rate was 8%, which is comparable to the response rate of countries conducting the survey either by email or by traditional mail (see Izquierdo et al. 2017).

turing, trade and business services. Specifically, 39% of firms belong to the manufacturing sector, 35% to the trade sector and 26% to the business services sector (see Chart 2).

The majority of firms in the sample (75%) are mainly domestically owned, 66% represent the parent company and around half of them are multi-establishment firms. Interestingly, 77% of firms have some exporting activity and, on average, 30% of their revenues are generated in foreign markets. For 18% of firms, foreign markets are the main market (i.e. they generate more than 50% of revenues) and, on average, 79% of revenues are generated there. The significant share of multi-establishment and exporting firms in our sample is consistent with the size distribution of our sample. Bigger firms are more likely to have premises in more than one location and are also more likely to be able to bear the initial sunk costs that are related to selling products in foreign markets.

Firms were asked to assess the impact and expected duration of the various shocks affecting their activities in the period 2010-2013. In particular, they were asked to provide answers regarding the impact of the following factors: (a) changes in demand; (b) volatility of demand; (c) access to external finance; (d) customers' ability to pay; and (e) availability of supplies from the usual suppliers. Answers on the impact were provided for each factor on a 5-point scale (1= strong negative impact, 2= moderate negative impact, 3= no impact, 4= moderate positive impact, 5= strong positive impact).

Tables 1a and 1b provide information regarding the impact of changes in demand. As expected, given the general macroeconomic picture of the Greek economy, 71% of firms reported that demand negatively affected their activities (40% noted that the negative impact was very strong).<sup>11</sup> It appears that the evolution of domestic demand exerted the strongest

#### 4 MAIN SHOCKS AS PERCEIVED BY FIRMS

In this section we analyse the main shocks affecting Greek firms in the period 2010-2013.

<sup>11</sup> The survey covers firms that survived the crisis, at least until the end of 2014 and early 2015, the period in which the survey was conducted. Therefore, the current survey is likely to underestimate the overall impact of the economic downturn on firms' activities, as it is not able to account for firm closures.

**Table 1a Impact of changes in demand in the period 2010-2013 (% of firms)**

(%)

	Strong negative impact	Moderate negative impact	No impact	Moderate positive impact	Strong positive impact
Demand	40	31	4	17	8

Source: Third wave of the WDN survey – Sample of Greek firms.

Note: Figures are weighted to reflect overall employment and rescaled to exclude non-response. The employment-adjusted weights account for the unequal probabilities of receiving and responding to the questionnaire across strata as well as for the average firm size (measured on the basis of the number of employees) in the population in each stratum. For a brief description of how these weights are calculated, see Babecký et al. (2010).

**Table 1b Evolution of demand for the main product (% of firms)**

(%)

	Strong decrease	Moderate decrease	Unchanged	Moderate increase	Strong increase
Domestic demand	41	34	3	18	4
Foreign demand	9	18	43	24	6

Source: Third wave of the WDN survey – Sample of Greek firms.

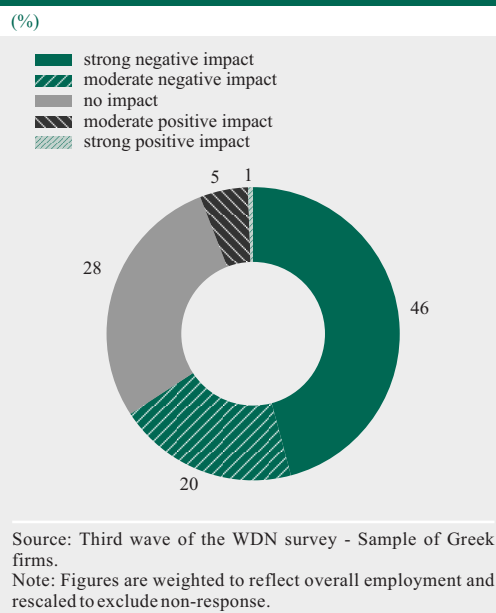
Note: Figures are weighted to reflect overall employment and rescaled to exclude non-response.

pressure on firms, with 75% of firms reporting that domestic demand decreased. By contrast, foreign demand appears to have supported firms' activities since most firms (73%) noted that foreign demand was either unchanged or positive. The share of firms reporting a decrease in foreign demand is comparatively lower (27%).

Credit constraints were also prevalent in Greece in 2010-2013 and this is confirmed by firms' replies in the survey.<sup>12</sup> In particular, regarding the impact of access to external financing, the majority of firms (66%) report a negative impact on their activities, with 46% reporting a strong negative impact (see Chart 3). Regarding the source of financial constraints, firms reported that both cost and quantity constraints were important (see Table 2). Cost and quantity constraints relating to working capital financing are considered as relevant or very relevant by half of the firms.<sup>13</sup> Cost and quantity constraints relating to investment financing and debt refinancing are also important as they are considered to be relevant or very relevant by over 40% of firms. Constraints relating to working capital appear, however, to be slightly more binding compared to the other options.

Concerning other shocks, 78% of firms report that they were negatively affected (strongly or moderately) by the volatility of demand and 61% that they were negatively affected by the availability of supplies from the usual suppliers. Interestingly, 85% of

**Chart 3 Impact of changes in access to finance in the period 2010-2013 (% of firms)**



firms report a negative impact of customers' ability to pay. Customers' ability to pay could be considered as a factor influencing firms' liquidity. Considering that constraints in accessing external finance were also prevalent, the survey shows that financial pressures have had a negative impact on the activities of a significant share of firms during the survey reference period.

<sup>12</sup> The growth of bank credit to non-financial corporations declined from 4.3% year-on-year in January 2010 to -5% year-on-year in December 2013 (Source: Bank of Greece).

<sup>13</sup> Firms were asked to rank each option in terms of relevance (1= not relevant, 2= of little relevance, 3= relevant, 4= very relevant).

**Table 2 Difficulties in access to finance in the period 2010-2013 (% of firms replying that restrictions are relevant or very relevant)**

Credit was not available to (quantity restrictions)		Credit was available but conditions were too onerous to (cost restrictions)	
Finance working capital	53	Finance working capital	54
Finance investment	49	Finance investment	45
Refinance debt	43	Refinance debt	45

Source: Third wave of the WDN survey - Sample of Greek firms.  
Note: Figures are weighted to reflect overall employment and rescaled to exclude non-response.

There appear to be no significant differences in the impact of the various shocks across different sectors and size classes. Size and sector dummies are insignificant in a simple probit regression where the incidence of negative shocks is the dependent variable and size and sector dummies the independent variables (see Table A1 in the Appendix). It appears that since the shocks that hit Greece were so pervasive, they influenced firms in all sectors alike. Interestingly enough, firms that are mainly foreign-owned are less likely to have been negatively affected by credit constraints and the availability of supplies. Therefore, domestic credit conditions and the availability of supplies do not seem to constitute a significant problem for foreign firms that most probably rely on their parent companies for funding and supplies.

Regarding the duration of shocks, firms were asked for each shock to indicate whether they considered it to be transitory, partly persistent or long-lasting. 71% of the firms reporting a negative impact of demand perceive that the shock to demand is partly persistent. The corresponding share is 74% for the volatility of demand, 71% for the access to external finance, 72% for customers' ability to pay and 59% for the availability of supplies from the usual suppliers. Therefore, the majority of firms reporting a negative impact of the shocks on their activity consider the shocks to be partly persistent.

## 5 MAIN CHANNELS OF FIRM ADJUSTMENT DURING THE CRISIS

The survey provides detailed information on the evolution of the various components of firms' costs, allowing the extent to which Greek firms reacted to the various shocks affecting their activity by adjusting labour input and wages to be explored. We start by analysing the evolution of total costs so as to assess overall cost developments and then we advance to a detailed analysis of the various cost categories.

Regarding total costs, firms were asked to indicate how total costs and their main components evolved during the period 2010-2013.<sup>14</sup>

Table 3 shows that 60% of firms reported that their total costs decreased (moderately or strongly). With respect to cost components, 68% of firms indicated that they experienced a decrease in labour costs, while the share of firms indicating a decrease in other cost components is much lower. In particular, only 16% of firms indicated that they experienced a decline in financing costs and 32% a decline in the cost of supplies. By contrast, a significant share of firms (57%) indicated that they actually experienced an increase in financing costs, an answer consistent with the analysis of credit constraints in the previous section.

The high share of firms indicating a decline in labour costs is also consistent with the labour market reforms that took place and made it easier for firms to adjust both wages and labour input. Interestingly, in other southern European countries, also affected by the crisis and taking steps towards reforming their labour markets, the share of firms experiencing a decline in labour costs is comparatively lower, i.e. 29% in Spain and 23% in Italy. The low response of labour costs in these two countries can be attributed to the moderate response of wages, since a significant share of firms in these two countries seem to have adjusted their labour input instead (see D' Amuri et al. 2015 and Izquierdo and Jimeno 2015).

The analysis so far has revealed that a significant share of firms experienced a decline in demand and total costs. It is therefore interesting to see whether prices followed a similar path. Firms were asked to indicate how their prices in the foreign and domestic markets evolved during the period 2010-2013.

Table 4 shows that 66% of firms experienced a decline in domestic prices (27% of which

<sup>14</sup> Firms were asked to indicate whether their costs: 1= decreased strongly, 2=decreased moderately, 3= remained unchanged, 4= increased moderately, 5= increased strongly.



**Table 3 Evolution of firms' costs in the period 2010-2013 (% of firms)**

(%)

	Strong decrease	Moderate decrease	Unchanged	Moderate increase	Strong increase
Total cost	12	48	8	24	8
Labour cost	20	48	15	15	2
Financing cost	3	13	27	27	30
Cost of supplies	6	26	25	37	6

Source: Third wave of the WDN survey – Sample of Greek firms.

Note: Figures are weighted to reflect overall employment and rescaled to exclude non-response.

**Table 4 Evolution of prices during the period 2010-2013 (% of firms)**

(%)

	Strong decrease	Moderate decrease	Unchanged	Moderate increase	Strong increase
Domestic prices	27	39	23	10	1
Foreign prices	6	30	52	11	1

Source: Third wave of the WDN survey – Sample of Greek firms.

Note: Figures are weighted to reflect overall employment and rescaled to exclude non-response.

report a strong decline). The share of firms indicating that prices increased is comparatively lower (11%). Regarding foreign prices, 52% of firms indicate that prices remained unchanged and 36% report that foreign prices declined. The evolution of domestic prices seems to be consistent with the intensity of the demand shock and the decline in costs. In foreign markets, Greek firms did not experience, as noted in the previous section, a comparable decline in demand. The evolution of foreign prices is therefore consistent with the evolution of foreign demand. Further, Greece is a small country and may in some markets be a price-taker.

### 5.1 ADJUSTMENT OF EMPLOYMENT

The decline in labour costs reported by many of the surveyed firms can be achieved by changing either labour input and/or wages. Next, we provide a detailed analysis of the evolution of labour cost components and start by analysing the extent to which firms adjusted labour input and the margins they used for this adjustment.

In particular, firms were asked to indicate whether during the period 2010-2013 they needed to significantly reduce labour input or alter its composition. Firms which answered that they did were then prompted to indicate to what extent they had altered their labour input through layoffs (collective, individual, temporary), subsidised reduction of working hours, non-subsidised reduction of working hours, non-renewal of temporary contracts at expiration, early retirement schemes, a freeze or reduction of new hires, a reduction of agency workers, external consultants and others. They were asked to indicate the use of each of the above margins on a 4-point scale (1= not at all, 2= marginally, 3= moderately, 4= strongly).

Interestingly, 55% of firms indicated that they needed to significantly reduce their labour input or alter its composition. The share is higher among firms experiencing one or more shocks. For instance, 67% of firms experiencing a demand shock said that they needed to adjust their labour input. The share is even higher among firms experiencing a demand

**Table 5 Labour input adjustment (% of firms)**

(%)

	Not at all	Marginally	Moderately	Strongly
Collective layoffs	87	9	1	3
Individual layoffs	24	42	24	9
Temporary layoffs	94	3	2	0
Subsidised reduction of working hours	95	3	1	1
Non-subsidised reduction of working hours	42	26	22	10
Non-renewal of temporary contracts	61	20	14	5
Early retirement schemes	80	14	4	3
Freeze or reduction of new hires	19	21	24	36
Reduction of agency workers and others	56	18	17	10

Source: Third wave of the WDN survey – Sample of Greek firms.

Note: Figures are weighted to reflect overall employment and rescaled to exclude non-response.

shock and financial constraints, i.e. 71%.<sup>15</sup> Table 5 shows the margins these firms used in order to achieve the required adjustment of their labour input. Specifically, the margin used significantly (moderately/strongly) by more than half of the firms is a freeze or reduction of new hires. A non-subsidised reduction of working hours, individual layoffs, a reduction in the employment of agency workers and others, and the non-renewal of temporary contracts were also used to a large extent by firms to adjust their labour input. By contrast, collective layoffs and early retirement schemes were not used much.<sup>16</sup>

The question analysed in Table 5 focuses on the intensity of use of the various margins firms used to adjust labour input. Another question allows us to quantify the actual adjustment of employment and hours and to link the use of these margins to the adjustment of permanent and temporary employment as well as hours.<sup>17</sup> Particularly, firms were asked to indicate how permanent and temporary employment, as well as hours, have evolved.<sup>18</sup> The share of firms reporting a decrease (moderate or strong) in the employment of permanent workers is 47%; the share of firms reporting a decline in the employment of temporary workers is 23%; and the share of firms reporting a decline in hours per employee is 18%.

Therefore, during the period under investigation, more than half of the firms surveyed needed to adjust their labour input or change its composition. Firms used a combination of measures in order to make the necessary adjustments and these led to a decrease in both permanent and temporary employment as well as a reduction in hours per employee. Employment adjustment seems however to have been higher than hours adjustment.

## 5.2 ADJUSTMENT OF WAGES

Prior to the global financial crisis wage cuts in Europe were very rare and firms, when faced with shocks, adjusted the wage bill by using other measures of labour cost adjustment such as pay and non-pay benefits, promotion

<sup>15</sup> Firms experiencing a demand shock are those reporting a (strong or moderate) negative impact of demand on their activities. Firms experiencing a demand shock and financial constraints are those reporting a (strong or moderate) negative impact of demand and access to external finance on their activities.

<sup>16</sup> There is a higher intensity of use of most measures of labour input adjustment across firms experiencing a demand shock or a demand shock and financial constraints. The ranking of measures, however, in terms of intensity of use does not change.

<sup>17</sup> The question on the evolution of permanent employment, temporary employment and hours is asked independently and is not directly linked to the question analysed in Table 5. The joint analysis of both questions could, however, provide an indication of the impact of the use of these margins on the actual evolution of employment and hours.

<sup>18</sup> They were asked to indicate whether temporary employment, permanent employment and hours have: 1= decreased strongly, 2= decreased moderately, 3= remained unchanged, 4= increased moderately, 5= increased strongly.



**Table 6 Share of firms having cut/frozen wages**

(%)

	Wage cuts	Wage freezes
2010	8	51
2011	18	46
2012	35	42
2013	28	43

Source: Third wave of the WDN survey – Sample of Greek firms.

Note: Figures are weighted to reflect overall employment and rescaled to exclude non-response.

freezes, etc. (see Babecký et al. 2012). The rarity of wage cuts is well documented in the literature and is attributed mainly to concerns about the retention of productive staff and the impact of wage cuts on workers' effort and morale (see Bewley 1995 and Campbell and Kamlani 1997). However, in 2010-2013 the intensity and duration of shocks were strong and extended. As noted in the previous section, 71% of Greek firms reported that the evolution of demand had a negative impact on their activities. It remains interesting therefore to examine whether during the recent recession Greek firms adjusted their wage bill by a downward adjustment of wages.

The WDN3 survey allows us to investigate this question as it asked firms to indicate whether they froze and/or cut base wages in each of the years 2010, 2011, 2012 and 2013. 63% of firms indicated that they kept wages constant at least once in the period 2010-2013. As regards the timing of wage freezes, Table 6 shows that 51% of firms indicated that they froze wages in 2010, 46% in 2011, 42% in 2012 and 43% in 2013. Concerning wage cuts, 55% of firms stated that they cut wages at least once.<sup>19</sup> As to the timing, the share of firms cutting wages was low in the initial phase of the crisis, 8% in 2010, and gradually increased to 18% in 2011 and 35% in 2012, before falling to 28% in 2013. The timing is consistent with the time pattern of reforms. Most reforms that allowed firms to adjust labour costs took place in 2011-2012, i.e. the possibility for firm-level agreements to undercut sectoral/occupational agreements,

the suspension of the extension of occupational and sectoral collective agreements to non-signatory parties and the reduction in the minimum wage.

The fact that downward wage flexibility is associated with the labour market reforms implemented during recent years is also confirmed by the probit regression results presented in Table A2 in the Appendix. For instance, firms applying firm-level agreements are less likely to keep wages constant. By contrast, firms applying firm-level agreements are more likely to cut wages. Another interesting result that emerges from the regression analysis is that foreign-owned firms are less likely to cut wages. This may be related to the skill mix of these firms as well as to their different wage policies.

If one looks at the timing of freezes and cuts, one observes that in the first years of the crisis the share of firms freezing wages was significantly higher than that of firms cutting wages. As the crisis progresses, the difference between the two shares is reduced. Of course, the timing of reforms is important. However, firms being aware of the negative impact of wage cuts on employees' morale appear to have exhausted all alternatives before cutting wages. As unemployment increased and options for switching jobs decreased, employees may have become less reluctant to accept wage cuts if this were to secure their jobs.

<sup>19</sup> The share of firms cutting wages is higher among firms experiencing a demand shock and firms experiencing a demand shock and credit constraints, i.e. 62% and 71%, respectively.

As mentioned earlier, prior to the crisis the adjustment of base and non-base wage components were substitutes. Firms did not cut wages but adjusted pay and non-pay benefits instead. During the current crisis, along with base wage cuts, Greek firms adjusted flexible wage components as well.<sup>20</sup> Therefore, in the current crisis in Greece the adjustment of base and non-base wage components were complements and this is confirmed by the positive correlation of the variable measuring wage cuts and that measuring the decrease in flexible wage components (0.3280).

In conclusion, in Greece, between 2010 and 2013 there appear to be no rigidities regarding wage and labour input adjustment. A significant share of firms adjusted both. Labour input adjustment (hours and employment) was still the main adjustment channel in many EU countries, but wage cuts appear to have been more frequently used in the EU in this recession. Yet, the share of firms adjusting wages in other countries is comparatively lower, i.e. 37% in Cyprus, 25% in Croatia, 23% in Ireland, 12% in Estonia, 16% in Latvia (see Izquierdo et al. 2017).

## 6 THE IMPACT OF REFORMS – CHANGES IN THE INSTITUTIONAL FRAMEWORK

As discussed earlier, during the period 2010-2013, wide-ranging reforms took place in Greece that made it easier for firms to adjust their labour input and wages and, indeed, many of the firms surveyed indicated that they adjusted both. The share of firms adjusting labour input and wages is, however, only partially informative about the flexibility provided to firms by labour market reforms. The WDN3 survey enables us to directly assess the flexibility provided to firms by asking them to indicate whether they found it easier or more difficult to perform a set of actions in 2013 compared to 2010. This is a potentially useful alternative source of information, as it is based on the perceptions and actual experience of firms and can supplement more objective indicators

**Table 7 Share of firms indicating that it has become less difficult/much less difficult to perform the following actions relative to 2010**

(%)	
Lay off employees collectively	43
Lay off employees individually	53
Lay off employees for disciplinary reasons	24
Lay off employees temporarily	34
Hire employees	54
Adjust hours	53
Move employees to other locations	34
Move employees to other positions	43
Adjust the wage of incumbents	63
Offer new hires a lower wage	80

Source: Third wave of the WDN survey – Sample of Greek firms.  
Note: Figures are weighted to reflect overall employment and rescaled to exclude non-response.

(i.e. the OECD Employment Protection Legislation index) that are created by classifying the changes in the underlying legislation.

Specifically, firms were asked to indicate whether it has become easier or more difficult to:

- lay off employees (collectively, individually, temporarily and for disciplinary reasons);
- adjust working hours;
- hire employees;
- move employees to other job positions or locations;
- lower the wages of incumbent workers and offer new hires a lower wage.

Firms were asked to provide a response on a 5-point scale: 1= much less difficult, 2= less difficult, 3= unchanged, 4= more difficult, 5= much more difficult.

<sup>20</sup> Firms were asked to indicate whether flexible wage components have: 1= decreased strongly, 2= decreased moderately, 3= remained unchanged, 4= increased moderately, 5= increased strongly.

As Table 7 shows, a significant number of firms indicate that they find it less difficult or much less difficult to adjust labour input and wages. In particular, 63% of firms report that it became easier to lower the wage of incumbents and 80% of firms report that it became easier to offer new workers lower wages. Regarding labour input adjustment, half of the firms indicate that it became easier to lay off employees individually and to adjust working hours as well as to hire employees.

Firms were also asked to indicate the factors making it easier or more difficult for them to adjust. They were prompted to indicate whether their answer to the above question was due to: (a) reform of labour laws; (b) law enforcement; (c) a change in the behaviour of trade unions; and (d) a change in the behaviour of the individuals. Table 8 shows the most frequently cited reason indicated by firms for each margin of labour cost adjustment. For firms reporting that it has become easier to adjust labour input and wages, the reform of labour laws is the most frequently cited reason in all cases except for the easiness to move employees to other locations and positions. In these two cases, the most frequently cited reason is changes in individual behaviour.

Finally, the survey allows us to assess the impact of reforms on the structure of the bargaining system, as many of the measures taken involved changes in this direction. The survey shows that there is a trend towards lower centralisation of wage bargaining, as the share of firms applying agreements concluded outside the firm declined, while the share of firms applying firm-level agreements increased. Indeed, the share of firms with agreements signed outside the firm stood at 43% in 2013, compared to 86% in 2007, while the share of firms applying firm-level agreements increased from 21% in 2007 to 26% in 2013. Accordingly, the share of workers covered by a collective pay agreement declined to 71% in 2013 from 91% in 2007 (see Izquierdo et al. 2017).

We have seen so far that, following the significant labour market reforms that took place, a substantial share of Greek firms find it easier to adjust both their labour input and the wage bill. However, it is also crucial to gauge how employment is likely to evolve as the country comes out of the crisis. The WDN3 questionnaire asked firms about their perceptions regarding obstacles to hiring employees with contracts of indefinite length, in an attempt to evaluate the relative importance of impediments emanating from the regulatory frame-

**Table 8 Most frequently cited reason why it has become easier to perform the following action (modal answer)**

Lay off employees collectively	Reform of labour laws
Lay off employees individually	Reform of labour laws
Lay off employees for disciplinary reasons	Reform of labour laws
Lay off employees temporarily	Reform of labour laws
Hire employees	Reform of labour laws
Adjust hours	Reform of labour laws
Move employees to other locations	Changes in the behaviour of individuals
Move employees to other positions	Changes in the behaviour of individuals
Adjust the wage of incumbents	Reform of labour laws
Offer new hires a lower wage	Reform of labour laws

Source: Third wave of the WDN survey – Sample of Greek firms.

**Table 9 Obstacles to hiring: most frequent ranking of reasons (modal answer)**

Economic uncertainty	Very relevant
Insufficient availability of required skills	Not relevant
Access to finance	Not relevant
Cost of other inputs	Of little relevance
Firing costs	Of little relevance
Hiring costs	Not relevant
High payroll taxes	Relevant
High wages	Not relevant
Risk that legal framework will change	Not relevant

Source: Third wave of the WDN survey – Sample of Greek firms.

work (i.e. payroll taxes, hiring and firing costs) and the environment in which firms operate (i.e. uncertainty, skill shortages, etc.).

In particular, firms were asked to rank in terms of relevance (i.e. not relevant, of little relevance, relevant, very relevant) the following nine factors: (a) uncertainty about economic conditions; (b) insufficient availability of workers with the required skills; (c) access to finance; (d) firing costs; (e) hiring costs; (f) high payroll taxes; (g) high wages; (h) risks that labour laws will change; and (i) costs of other inputs complementary to labour.

Table 9 shows that economic uncertainty is the only reason cited most frequently as very relevant by Greek firms. The other impediment that is most frequently ranked as relevant is the high payroll taxes. The remaining obstacles presented in Table 9 are most frequently considered by Greek firms as not relevant or of little relevance. Interestingly, high wages as well as hiring and firing costs are most frequently considered to be obstacles of no or little relevance, which is consistent with the fact that firms find it easier now to adjust labour input and wages. Thus, for Greek firms, the most binding obstacle to hiring employees with contracts of indefinite length appears to be economic uncertainty and, to a lesser extent, payroll taxes rather than the regulatory framework, which in any case has been significantly reformed in the recent period.

## 7 CONCLUSIONS

This paper summarises the main findings of the third wave of the WDN survey in Greece. The survey has allowed us to investigate how firms have adjusted to shocks and, to what extent, according to their perceptions, labour market reforms have made it easier for them to adjust labour input and wages.

The survey shows that the decline in economic activity, during the period 2010-2013, had a significant negative impact on firms' activity. Firms reacted to shocks by adjusting both labour input and the wage bill. Interestingly, the share of firms adjusting wages in Greece is the highest among the countries participating in the WDN3 survey.

Furthermore, reforms seem to have made it easier for firms to adjust to shocks. A significant number of firms report that it was easier for them to adjust labour input and wages in 2013, compared to 2010. Firms attribute this flexibility mainly to the reform of labour laws.

The survey shows that Greek firms consider economic uncertainty to be the most binding obstacle to hiring new employees with contracts of indefinite length. By contrast, the regulatory framework, which has been significantly reformed in the recent period, is not frequently considered a relevant obstacle to hiring permanent employees.

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## APPENDIX

**Table A1 Probit estimate (marginal effects) – Probability of a negative impact (strong or moderate) of shocks**

	Demand	Access to finance	Volatility of demand	Customers' ability to pay	Availability of suppliers
<i>Reference category: 200+ employees</i>					
5-19 employees	0.05100 (0.09454)	0.12002 (0.09416)	-0.04892 (0.09034)	-0.03427 (0.06672)	0.14408 (0.09685)
20-49 employees	-0.00401 (0.07232)	-0.01544 (0.08339)	-0.00203 (0.06176)	0.06597 (0.04152)	0.00277 (0.08187)
50-199 employees	-0.03984 (0.07227)	-0.13096 (0.08379)	-0.07126 (0.06507)	0.02043 (0.04321)	0.03708 (0.07939)
<i>Reference category: Manufacturing</i>					
Trade	0.08192 (0.05838)	0.03637 (0.06892)	0.10202** (0.04754)	0.04224 (0.04010)	-0.05330 (0.07154)
Business services	-0.01985 (0.06460)	-0.00574 (0.07215)	-0.02981 (0.05314)	-0.04787 (0.04530)	-0.06486 (0.07528)
Foreign-owned	-0.01263 (0.06060)	-0.46379*** (0.06695)	-0.07069 (0.05337)	-0.02302 (0.04234)	-0.34194*** (0.06993)
<b>Observations</b>	<b>333</b>	<b>304</b>	<b>348</b>	<b>367</b>	<b>297</b>

Source: Third wave of the WDN survey – Sample of Greek firms.  
Notes: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.



**Table A2 Probit estimates (marginal effects) – Probability of having frozen or cut wages**

	Have frozen wages at least once	Have cut wages at least once	Have cut wages at least once
<i>Reference category: 200+ employees</i>			
5-19 employees	-0.24684 (0.16496)	-0.19793 (0.17025)	-0.05819 (0.18936)
20-49 employees	-0.04495 (0.10278)	0.01973 (0.12680)	0.00584 (0.13390)
50-199 employees	-0.03391 (0.10309)	0.11612 (0.12571)	0.06725 (0.13520)
<i>Reference category: Manufacturing</i>			
Trade	-0.04277 (0.07772)	-0.15065 (0.09297)	-0.08319 (0.10254)
Business services	-0.09024 (0.09387)	0.07224 (0.10382)	0.12235 (0.10554)
Credit constraints	0.25986*** (0.07627)	0.34349*** (0.08042)	0.26974*** (0.09168)
Demand shock	0.07595 (0.08054)	0.29999*** (0.08753)	0.34013*** (0.08744)
Firm-level agreement	-0.21478** (0.09534)	0.29789*** (0.08946)	0.31182*** (0.09354)
Foreign-owned			-0.26566*** (0.10078)
<b>Observations</b>	<b>199</b>	<b>199</b>	<b>193</b>

Source: Third wave of the WDN survey – Sample of Greek firms.

Notes: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.