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EVIDENCE FROM THE WAGE DYNAMICS NETWORK SURVEY

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The behaviour of French Firms during the Crisis: Evidence from the Wage Dynamics Network Survey[1]

Christophe Jadeau[2], Edouard Jousselin[3], Sébastien Roux[4], Gregory Verdugo[5]

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Abstract

En lien avec la Banque Centrale Européenne et 24 autres banques centrales de l'Union Européenne, la Banque de France a interrogé 1150 entreprises françaises afin de mieux comprendre comment la crise a affecté leur environnement économique et leurs pratiques de gestion de main d'œuvre entre 2010 et 2013. Une majorité de salariés était employée par des entreprises indiquant que leur activité avait été le plus affectée par une baisse de la demande, baisse considérée comme durable par plus de 40% d'entre elles, en particulier dans le secteur de la construction et parmi les petites entreprises. En revanche, moins de 20% des entreprises (pondérées par leurs effectifs) déclarent que leur activité a été affectée par des contraintes de crédit. Sur la période, malgré le ralentissement de l'économie, le montant des coûts totaux a augmenté pour 70% des entreprises (pondérées par leurs effectifs) principalement du fait des coûts du travail et seulement ensuite par le coût des approvisionnements. En particulier, les salaires de base ont continué à augmenter pour une grande part des entreprises, suggérant l'existence de fortes rigidités salariales à la baisse. De nombreuses firmes reportent des difficultés substantielles à ajuster leur force de travail : il leur est devenu plus difficile depuis la crise d'embaucher des travailleurs qualifiés, d'ajuster leurs horaires de travail ou de muter les employés à des postes différents. La présence simultanée de difficultés à trouver des employés et de la croissance du chômage suggère que le chômage structurel s'est accru au cours de la période. Les autres facteurs considérés par une large majorité d'entreprises comme contraignants pour la croissance de l'emploi sont l'incertitude sur les conditions économiques à venir, les risques de modification de la législation du travail et le niveau élevé des charges sociales et des coûts de licenciement.

Mots clés : ajustement des salaires, France, Réseau sur les dynamiques salariales (WDN).

JEL Codes: E24, D4, L11

Abstract

In coordination with the ECB and 24 other national central banks of the European Union, the Banque de France interrogated 1150 French firms to understand how the crisis affected their economic environment and their human resources practices during the 2010-2013 period. A majority of workers were employed by firms which indicate that their activity was mostly affected by a decrease in demand considered as long-lasting by more than 40% of them, especially in the construction sector and among small firms. In contrast, less than 20% of firms (weighted by their employment) report that the unavailability of credit had an effect on their activity. Over the period, despite the economic downturn, the amount of total costs increased for 70% of firms (weighted by their employment) mainly through an increase in labour costs and secondly in the cost of supplies. In particular, base wages continued to increase for a large share of firms, suggesting strong downward wage rigidities. Many firms indicate substantial difficulties in adjusting the labour force: throughout the crisis it became more difficult to hire qualified employees, to adjust working hours or to move workers to different job positions. The joint presence of difficulties in finding employees and unemployment growth suggest that structural unemployment increased in France in recent years. Other factors considered as significantly constraining for employment growth by a large majority of firms are uncertainty about economic conditions, risks that labour laws are changed, high payroll taxes and firing costs.

Keywords: wage adjustment, France, wage dynamics network.

JEL Codes: E24, D4, L11

Non-technical summary

To investigate the consequences of the Crisis on firms, the Banque de France, in coordination with the European Central Bank (ECB) and 24 other national central banks surveyed about 1150 firms between June and September 2014. This survey was coordinated by the Wage dynamics network (WDN), a research network dedicated to the study of the features and sources of wage and labour cost dynamics and their implications for monetary policy in the euro area.

Firms were surveyed simultaneously across 25 countries of the European Union on the basis of a common questionnaire. This paper focuses solely on France and provides a detailed tabulation of the answers of French firms to each question. Some questions are examined with respect to the size and sector dimensions of the respondents. Readers interested in other countries participating in the survey can obtain information on specific reports on the ECB website.

Following two previous surveys on 2007 and 2009, this one investigates deeply the behaviour of firms during the period 2010-2013 and their reactions to labour market reforms which occurred during this period. First, firms were surveyed about the nature of the shock: in particular, the survey asked if the main drivers of their economic activity were changes in the demand or constraints in accessibility of funding. Second, the survey investigated how firms adjusted prices, employment and wages during this period. Finally, firms were interrogated on the main obstacles to hiring.

The results show that the main economic shock that have affected the firms' activity was a tightening of demand. Confronted with such an issue, firms had to adapt their behaviour to the evolution of their activity. The nature of their adjustment provides interesting information about the structural rigidities that affect the French labour market. The main result of the survey for France is that base wages were not responsive to the drop of activity, even at the firm level. Strong rigidities seem to have prevented firms from adjusting the wages. The survey allows to distinguish between firms which were constrained by their demand (mostly small firms and in the construction sector) from firms whose situation was better. These firms report increasing difficulties to find employees who have the required skills. This evidence is a matter for concern

about the ability of French firms to benefit from an economic recovery, since such difficulties arise even in a period of high unemployment.

1. Introduction

France's GDP contracted by 2.6% in 2009. While the downturn was lower than the OECD average, this recession has been the deepest experienced since World War II. Since 2009, the recovery remains slow and the economy has stalled, with no economic growth in 2012, and only a 0.7% increase in GDP in 2013 and 0.2% in 2014 (Figure 1a).

Simultaneously, the labour market deteriorated rapidly and the unemployment rate increased substantially, from 7% in 2008 to 10.3% in 2013 (Figure 1b). While the unemployment rate stabilised in 2013-2014, its level remains very high in 2014, at 10.4% in the third quarter, still at a lower level than in the Euro area.

In light of the depth of the crisis, an important question is which public policies could improve the economic growth and the employment situation of the French economy. The appropriate policies depend on how the economic environment of firms was affected by the crisis and on the constraints that they currently face when they make hiring or firing decisions. While these are key questions, there is relatively little direct empirical evidence from firms.

To investigate these issues, the Banque de France, in coordination with the European Central Bank (ECB) and 24 other national central banks surveyed about 1150 firms between June and September 2014. This survey was coordinated by the Wage dynamics network (WDN), a research network dedicated to the study of the features and sources of wage and labour cost dynamics and their implications for monetary policy in the euro area.

Created in 2006, the network has produced a substantial amount of research which has generated a large interest in both the academic and policy circles.[6] Results from a first and second survey in 2007 and 2009 provided major insights on the response of firms to economic shocks on important topics such as the adjustment of labour costs when nominal wages are rigid (Babecky et al. 2012), the response of prices and wages to shocks (Bertola et al. 2012) or the determinants of wages of newly hired workers (Galuscak et al 2012).[7]

[6] See https://www.ecb.europa.eu/home/html/researcher_wdn.en.html for a presentation of the network.
[7] See ECB (2009) for an overall summary of the results of the previous work.

For France, the previous surveys indicated that, in 2009, in response to the downturn, while firms have attempted to reduce labour costs, cuts in base wages remained exceptional. Firms adjusted their payrolls mainly through reductions in temporary and permanent staff and, to a lesser extent, using the variable components of compensation (Horny et al., 2010).

The 2014 survey investigates more deeply the behaviour of firms during the period 2010-2013 and their reactions to labour market reforms which occurred during this period. First, firms were surveyed about the nature of the shock: in particular, the survey asked if the main drivers of their economic activity were changes in the demand or constraints in accessibility of funding. Second, the survey investigated how firms adjusted prices, employment and wages during this period. Finally, firms were interrogated on the main obstacles to hiring.

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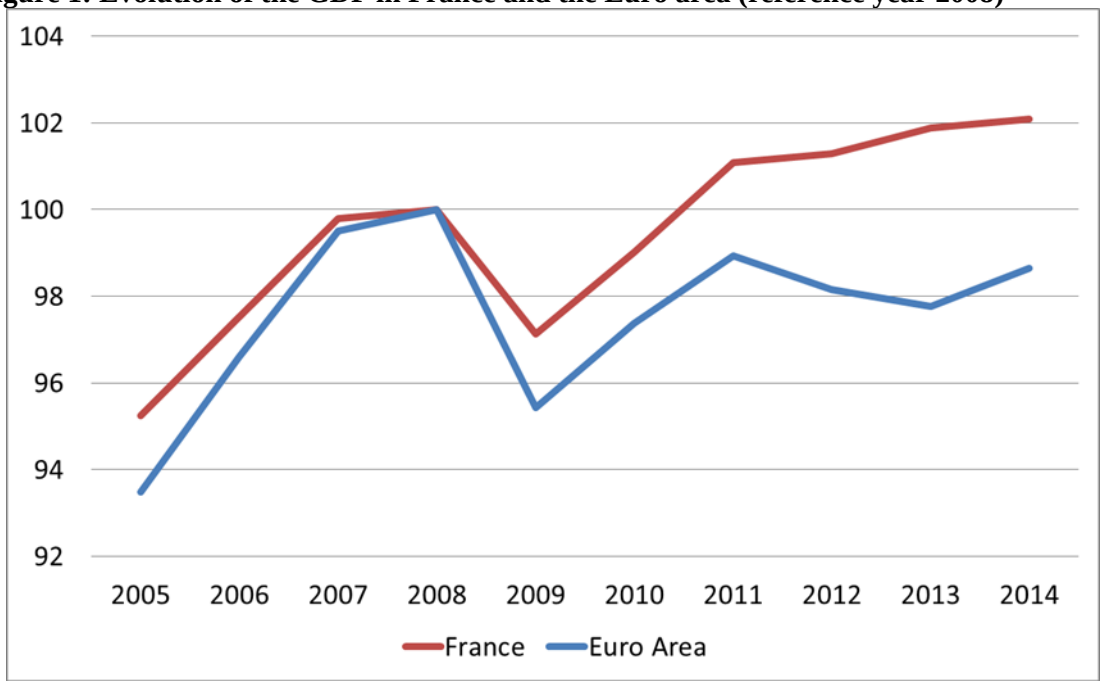
The rest of the paper proceeds as follow. In the next section, we explain the main characteristics of the French labour market and the institutional changes implemented during the

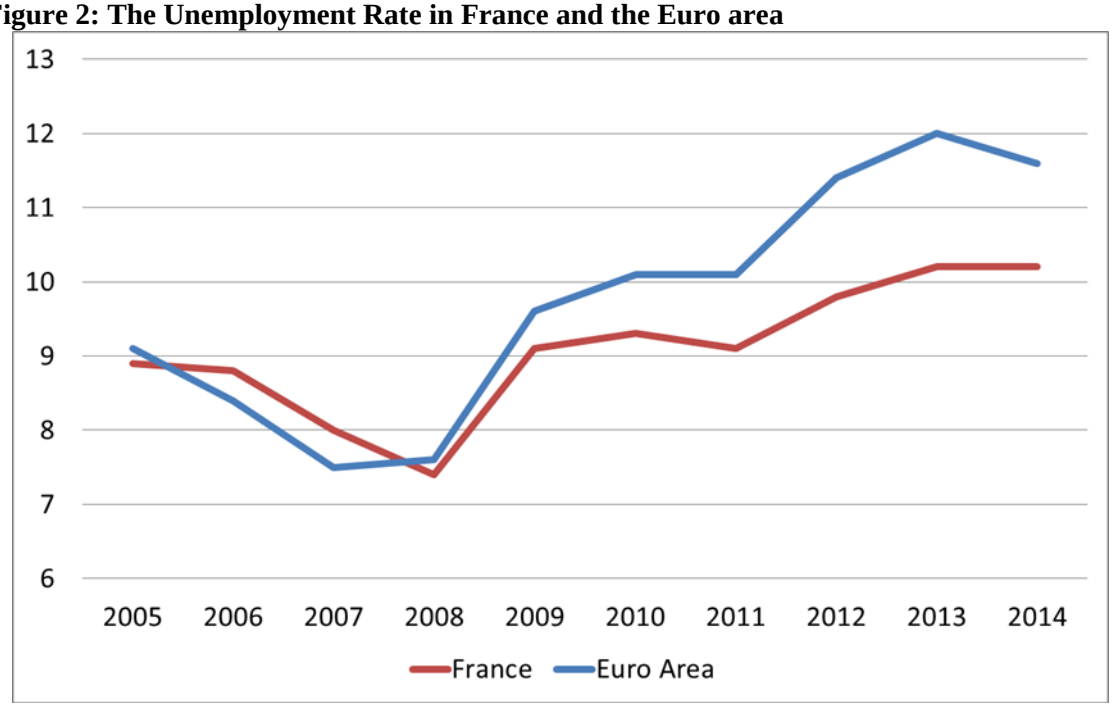
crisis. We describe the methodology of the data collection procedure in the French case in a third section. In a fourth section, we present the results of the survey. The last section concludes.

Figure 1: Evolution of the GDP in France and the Euro area (reference year 2008)



Source: Eurostat
Index (2008 = 100)

Figure 2: The Unemployment Rate in France and the Euro area



Source: Eurostat

2. Main Features of the French Labour Market

To better understand the context of the survey, this section aims to focus on the main features of the French labour market and its recent evolutions and to present the late French labour market reforms. In section 4, the survey provides a way of analysing the success or otherwise of the labour market reforms that happened during 2010-13.

a. Main institutional characteristics of the French labour market

Labour relations in France are characterized by a sophisticated system of employee representation where both trade unions and elected representatives coexist at the firm level. French trade unions are divided into a large number of confederations, competing for memberships. The share of union membership is among the lowest in the OECD countries with only 7% of employees reporting to be member of a union.

At the national level, representatives of the main unions negotiate agreements with employers' associations that are often "translated" into law by the Parliament.[8] Negotiations between the social partners occur also at the firm and industry level.[9] Bargained industry-specific and occupation-specific wage floors have to be negotiated every year at the industry level. Each industry has its own classification, which can be very complex (Fougère, Gautier and Roux, 2015). Most often, agreements signed at the industry level by unions and employers' association are extended by the government to all firms in the industry, including the ones which don't belong to the employers' associations that have signed it. This extension mechanism explains why collective bargaining coverage is very high, around 95%.

In addition to the collective bargaining at the industry level, firms where union representatives are present are entitled to negotiate every year on wages. Unlike industry level bargaining which specifies wage floor levels, only collective wage rises are negotiated.

[8] This was in particular the case of the national inter-professional agreement signed by a majority of unions and employers representatives in January 2013 on competitiveness and job security. It was turned into a law in June 2013. Social partners (i-e unions and employers associations) also manage the main French social security organisms.

[9] Labour relations are organised in more than 700 different industries that have been constituted for decades. Some industries include less than 100 employees, although the largest ones include more than several hundred thousand workers.

In 2008, a reform of industrial relations gave a more important role to the firm level bargaining with respect to the industry level bargaining. [10] Firm level agreements could depart from industry level agreements on several domains such as the working time. For the last decade, the number of firm level agreements has strongly increased, reflecting a decentralization process of the industrial relations from the industry level to the firm level (Naboulet, 2011).

Finally, the national minimum wage is relatively high in France as it stands at about 60% of the median wage. However, since social contributions are progressive up to 1.6 times the minimum wage, its cost is in the median range among the OECD countries. The national minimum wage is increased every year, its progression being indexed to the inflation plus half of the increase of the average real wages of blue collar workers and employees.[11]

b. Major labour market reforms during 2010-2013

During the 2010-2013 period, the most important set of reforms aimed at decreasing the cost of labour was the introduction in January 2013 of the CICE (*Crédit d'impôt pour la compétitivité et l'emploi*), namely a permanent tax credit to encourage competitiveness and jobs. This tax credit had for consequence to decrease the social contributions paid by firms for their workers whose wage was lower than 2.5 times the minimum wage. The credit progressively reduced the cost of labour by 4% in 2013 and 6% in 2014. Another important change was that social contributions and payroll taxes on overtime hours were suppressed in 2008 but reintroduced in 2012. On the 2010-2012 period, although the government restricted the rises of the national minimum wage to their mandatory requirements, it provided incentives to the social partners to set the lowest bargained minimum wages in each industry at a higher level than the national minimum wage, which had a supplementary inflationary effect on wages (Fougère, Gautier and Roux, 2015).

[10] Simultaneously, national representativeness rules of unions were set based on professional elections of union representatives. This reform established in 2012 the representativeness of the five major trade unions in France.

[11] The national minimum wage is set by the government after having been presented to national representatives of unions and employers' associations. See Cette, Chouard et Verdugo (2013) and Cette and Wasmer (2012) for a discussion of the consequences of this adjustment mechanism. Recent research suggests that the growth of the minimum wage is responsible of a significant compression of the lower part of the wage structure in the last decade (Verdugo, 2014).

Besides these measures that aimed at reducing the labour costs, several reforms have been adopted to improve the functioning of the labour market most often by creating new types of labour contracts.[12] Since 2008, France has introduced three new employment contracts: the "single inclusion contracts" (2008, "CAE-CUI") targeted to individuals living on welfare (minimum social benefits); the "future jobs" contract (2012, "Contrats d'avenir") specifically introduced for young people with little or no diplomas; and the "cross-generation contracts" (2013, "Contrats de generation") which provides tax deduction to employers hiring a workers less than 26 years old and committing to keep a worker older than 57. The success of these new contracts has been mixed (Branche-Seigeot and Garoche 2015).

c. Characteristics of the wages and employment dynamics during the crisis

Our report draws on previous studies on the impact of the crisis over wages and employment. Deroyon and Romans (2014) study the evolution of wage and employment bargaining during the crisis. Based on a survey of 4,000 firms with more than 20 employees in the non farm business sector (enquête REPONSE), their results show that over the 2008-10 period, a firm was much more likely to face a decrease in its activity than six years before. The wage adjustment was principally associated to the tightening of activity but also to the composition of the firm's workforce. Decline in enrolment levels were more frequent in industries and corporate groups, even more than the decrease of activity should cause.

Askenazy et al. (2013) examine wage dynamics in time of crisis. They explain that wage dynamics in France have their origins as much within firms as in the labour market institutions. In spite of the crisis, there is no evidence that the average net real wage has been affected over the 2008-10 period. Part of the apparent increase in net real wages in the private sector during the crisis is due to composition effect: job cuts mainly affected employees receiving low

[12] The French labour market is strongly segmented. About 10% of the employees are on a fixed-term contract and this proportion reaches 38% among workers aged less than 24 years (Guggemos and Vidalenc 2014). Being on a temporary contract does not always appear to be a stepping stone into a stable employment for most workers. Indeed, the 2014 OECD Employment Outlook indicates that France is one of the few OECD countries where an unemployed person has a higher probability to be in a permanent job one year later than someone in a temporary job.

remuneration. When it comes to rigidities, the authors report that part of wage rigidity is explained by behavioural factors since firms want to preserve incentives and positive workplace atmosphere. Secondly, in addition to the national minimum wage growth, the broad coverage of industry-wide agreements limits the ability of firms to adjust wages (Fougère et al. 2015).

Audenaert et al, (2014) and Verdugo (2015) show that since 2008, wage growth slowed far less than productivity. Two factors could explain such a situation: firstly a change in the structure of the workforce, secondly the presence of downward wages rigidities. Both studies conclude that downward wage rigidities were not that important, using the French Labour Force survey (Insee) for Audenaert et al, and the European Community Household Panel (ECHP) for Verdugo. These two studies disagree however on the role of the compositional effects, considered as minor by Audenaert et al. and of first-order by Verdugo. The measure of wages in both studies incorporates also its flexible components which may prevent the identification of downward base wage rigidities. In all cases, the under-adjustment of wages to the decreasing productivity could be explained by the long-term duration of wage adjustments and the existence of industry-wide agreements limiting the adjustments (Ayouvi-Dovi et al., 2013).

The WDN survey gives the opportunity to examine from the firms' perspective for the period 2010-2013 this evidence that was mostly based on the period 2008-2010 or on household data.

3. The survey

Before using the survey to analyse how conditions in the French labour market changed over the period 2010-13 in response to shocks and policy changes, we describe in this section the survey itself and the characteristics of the sampled firms.

a. Sample

The third wave of the WDN survey was carried out using an initial population of 4,778 firms, regularly interviewed for the monthly Business survey of the Banque de France (*Enquête de*

conjoncture).[13] These firms cover 20 % of the sales turnover of the general population[14], and the way the sample has been drawn ensures its representativeness.

The survey was carried out in collaboration with local branches of the Banque de France, in particular the local managers of the Business survey who regularly interview the same personal contacts within firms.[15] These regular interactions were seen as a way to improve both the response rate and the accuracy of the answers.

b. Response rate and characteristics of the respondents

The data was collected between June and November 2014 using email, phone contact or regular mail. Overall, 1,156 answers were received, mostly by e-mail: the global response rate is thus 24%.[16] They are representative of the 365,000 firms with more than 5 employees active in the manufacturing industry and other sectors. The response rates vary from 58% to 100% depending on the question. For more than 80% of questions, the response rates are higher than 90%, suggesting that most respondents completed the questionnaire. The answers have been mostly provided by human resources or finance managers, who have a good knowledge on the subjects of the survey (Table 1).

The survey covers the following sectors of the NACE Rev. 2 classification of economic activities in the European Community:

[13] After discarding firms with less than five employees, the initial database included 10,054 companies. We retained the 957 largest firms in terms of sales turnover while 3,821 firms were randomly selected amongst the 9,097 remaining firms.

[14] These firms account for about 90 % of the sales turnover of the Business survey sample. The firms were selected among the samples of seven separate business surveys on construction, wholesale trade, manufacturing, market services, public works and retail trade (two surveys). See the data appendix for details.

[15] In some cases, the Business survey relied on several contacts in different establishments for the same firm. For most firms, an *a priori* selection was made in order to send the questionnaire to only one contact. For some firms, the choice of the respondent was left to the various contacts of the Banque de France in the firm. Overall, 5,364 questionnaire were sent corresponding to 4,778 selected firms: 171 firms received one or more questionnaire in different establishments. However, the final sample only contains one answer per company. As a result, the probability of inclusion in the final sample of firms from the non-exhaustive stratum depends on the number of its contacts with the Banque de France branches. This issue is taken into account in the computation of sampling weights.

[16] We do not take into account the mode of transmission in the computation of weights. The choice between e-mail, phone and traditional mail was left to each firm by the survey managers and we assume it did not affect the probability to answer.

- Manufacturing (C);
- Construction (F);
- Wholesale and retail trade; repair of motor vehicles and motorcycles (G);
- Services, among which
    - Transportation and storage (H);
    - Accommodation and food service activities (I);
    - Information and communication (J);
    - Professional, scientific and technical activities (M);
    - Administrative and support service activities (N);

Table 1 : Position of respondents of the WDN survey in the firm

Top Management (43.8 %)	Chair	11.1%
	CEO	6.0%
	Executive board, partner	0.8%
	Chief human resources officer	4.9%
	Chief financial officer	18.7%
	Site manager	2.3%
Management (47.3 %)	Human resources	5.9%
	Finance/accounting	9.9%
	Administration	8.3%
	Management controller	4.1%
	Manager	19.2%
Assistant (2.4 %)	Human resources assistant	0.3%
	Accounting assistant	0.3%
	Management assistant	1.0%
	Assistant	0.9%
Missing		*6.5%*

Among the respondents, the manufacturing industry is over-represented (Figure 3) and small firms are underrepresented (Figure 4 and 5). These biases reflect both to the structure of the initial sample, the sampling method and response biases. To make the results representative, three types of weights were calculated: (i) the *basic sampling weight* which adjusts for the unequal probability of firms ending up in the realized sample, (ii) the *employment adjusted sampling*

weight which ensures the representativeness of employees in the population, and (iii) the *importance weight* which is proportional to the size of the firm (in terms of employment).[17]

Figure 3: Share of industries in the general population and respondents (%)

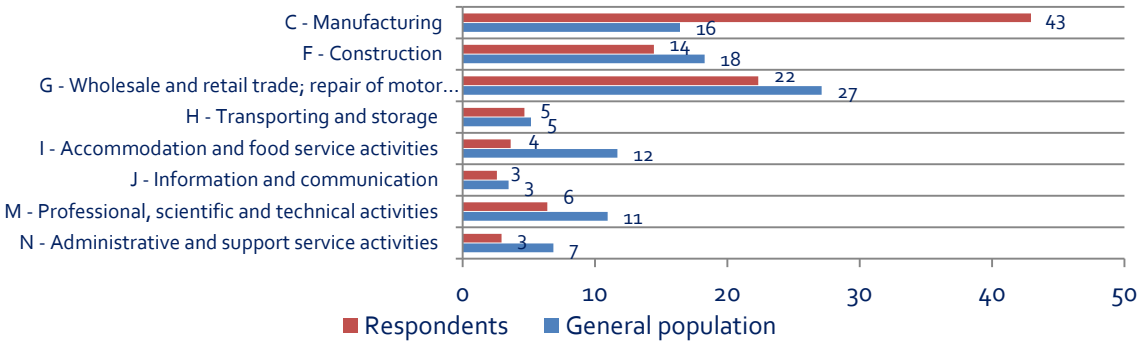


Figure 4 Distribution of the number of employees (%)

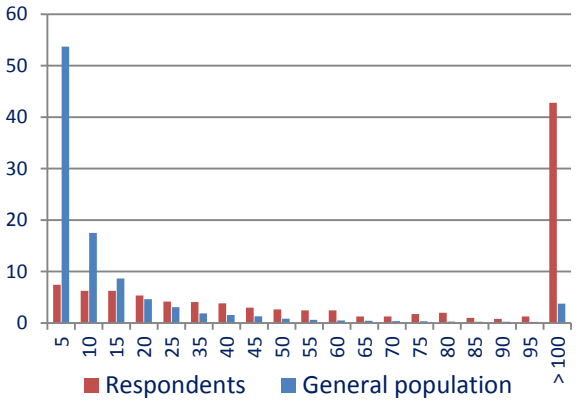
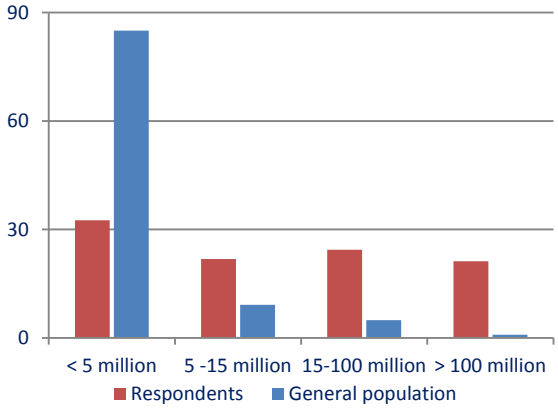


Figure 5: Distribution of sales turnover (%)



Source: WDN survey

4. Results

This section presents the results of the survey. They aim at examining the nature of the shocks experienced by the firms, how they have reacted to these shocks and how structural rigidities in

[17] The computation of the weights had to take into account the differences between the realized sample and the general population. Three effects were taken into account in the computation of weights:

- the probability of inclusion in the initial business survey sample (strata by sector and size: number of employees, revenue by employee)
- the probability of inclusion of business survey respondents in the final sample;
- a post-stratification using the method of "marginal calibration" to deal with non-response and to improve accuracy. The margins are the number of firms by sector, the number of employees, and the total turnover sales. The post-stratification reduces the dispersion and homogenizes the distribution of original weights.

The employment adjusted sampling weight is obtained through a proportional correction of the basic sampling weight by stratum in order to obtain the number of employees.

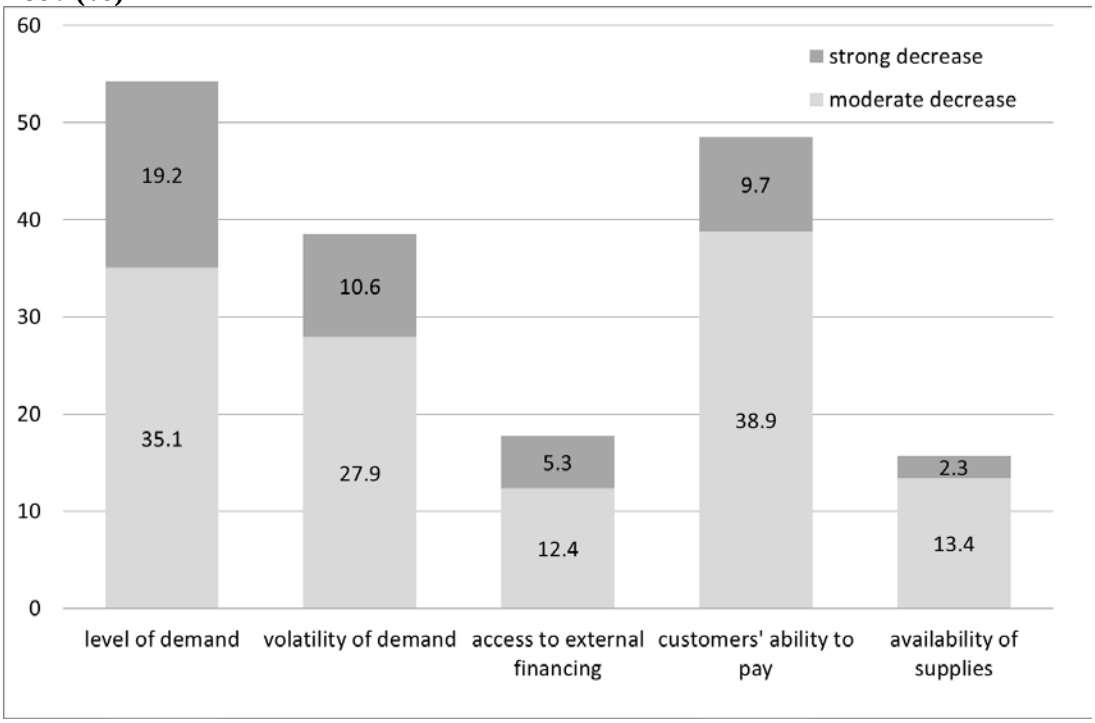
the French labour market have influenced their ability to adjust. During this period of crisis, macroeconomic studies have highlighted an under-adjustment of employment (Cochard et al., 2011) and wages (Askenazy et al., 2012) to the added value changes. Our results suggest also that the structural rigidities of the French labour market have prevented firms from adjusting to the decrease of activity.

To account for the differences in firms' sizes, the reported answers are weighted by the number of employees in the firm. This implies that we give a larger weight to larger firms, thus making the answers representative of the behaviour of firms as experienced by employees. For the sake of completeness, for several questions, we present detailed tabulations of the answers in the Appendix.

a. Sources and size of shocks

In the context of the slow growth in output and the rising unemployment in France discussed in the introduction, here we investigate the sources and size of the shocks experienced by individual firms over this period.

Figure 6: How did the following factors affect your firm's activity during the 2010-2013 period? (%)



Source: WDN Survey, Employment weighted distribution

The first part of the survey investigates how the environment of firms has changed during the 2010-2013 period. A first important question is the nature of the economic shock. 55% of firms respond that a change in demand decreased their activity (Figure 6). This share is particularly large in the construction sector where it goes up to 74% and for firms with less than 50 employees where this share is of 60% (Table 2). A large share of firms indicates that demand factors such as changes in customer ability to pay and increased demand volatility have also influenced their activity with some differences according to their sector or size (see table 2). Conversely, only 30% of firms report an increase in demand.

Table 2: Share of firms declaring having been moderately or strongly affected by a negative shock on one of the following factor

		Level of Demand	Volatility	External Financing	Customer's ability to pay	Availability of supplies
All Firms		54.3%	38.5%	17.7%	48.5%	15.7%
Sector	Manufacturing Industry	51.0%	35.0%	17.5%	36.5%	20.0%
	Construction	73.5%	51.5%	26.0%	64.2%	16.5%
	Trade	60.7%	43.9%	16.4%	46.5%	19.1%
	Services	47.8%	34.3%	16.4%	52.5%	11.2%
Size	5-19 employees	61.3%	49.7%	23.4%	46.6%	21.8%
	20-49 employees	62.8%	44.2%	18.7%	50.7%	13.6%
	50-199 employees	52.0%	34.0%	16.1%	49.0%	17.7%
	200 and more	46.8%	34.0%	15.9%	47.4%	9.9%

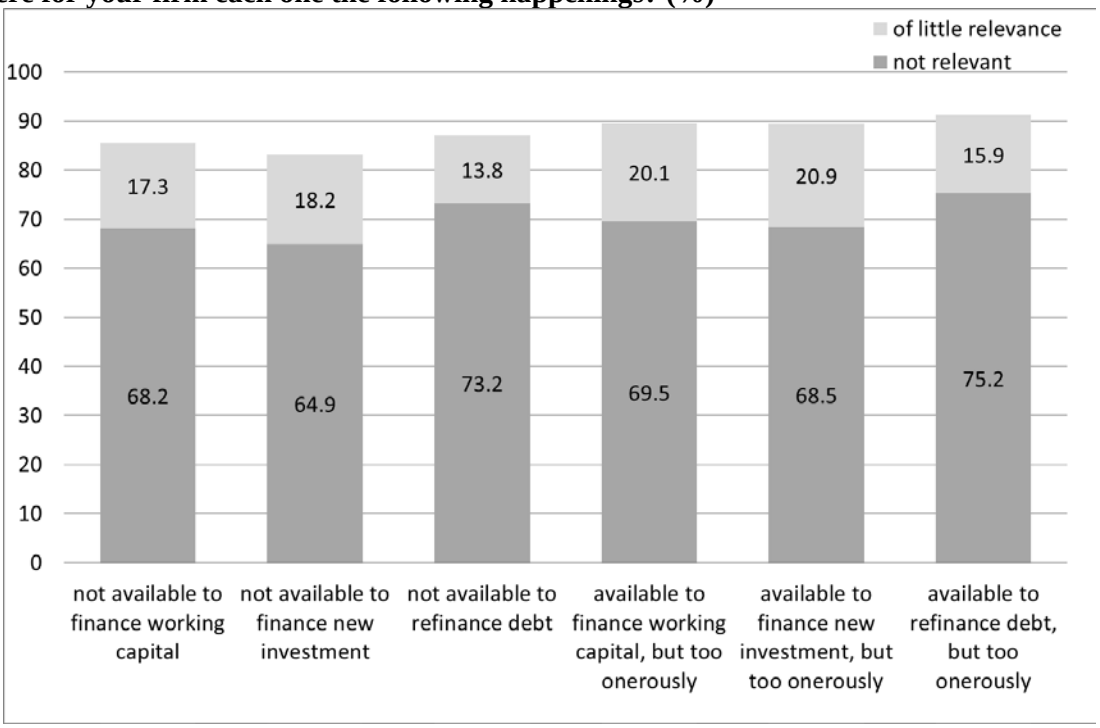
Source: WDN survey, Employment weighted distribution

Relatively few firms (around 18%) declare that a change in external access to credit has influenced their operations. Firms in the construction or small firms declare more often having been affected by a decrease in their external access to credit. However, differences remain small: only 26% of the firms in the construction have declared such difficulties and only 23% of firms with less than 20 employees (Table 2).[18] In accordance with this, the unavailability of credit or the cost of credit had little influence on the activity of more than 80% of firms (Figure 7). This result is also consistent with Kremp and Sevestre (2011) who find no evidence of credit rationing on the 2008-2010 period on small and medium sized-firms. In 2009, The European Central Bank launched a bi-annual Survey on the Access to Finance of small and medium-sized Enterprises

[18] An ordered probit analysis shows that these differences are not significant.

(SAFE) in the euro area (ECB, 2009, 2010a, 2010b, 2011). According to this survey, less than 3% of French SMEs report they had suffered from a full credit rationing either in 2009 in2010.

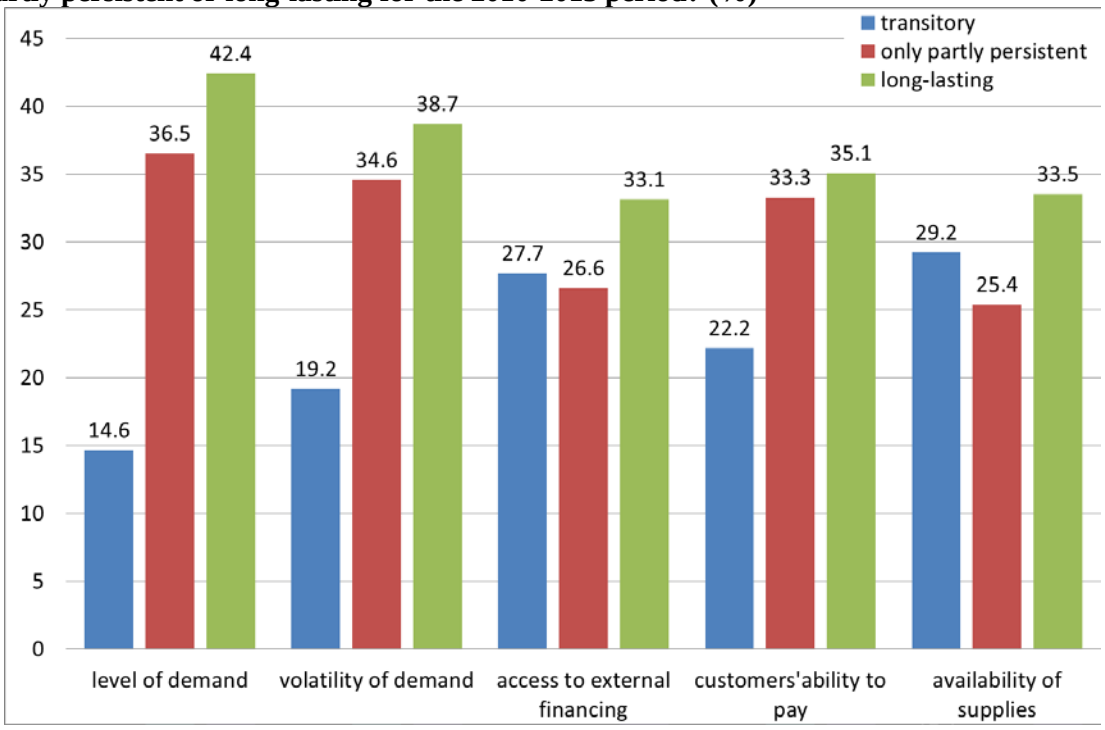
Figure 7: With regard to finance, please indicate for the 2010-2013 period how relevant were for your firm each one the following happenings? (%)



Source: WDN Survey, Employment weighted distribution

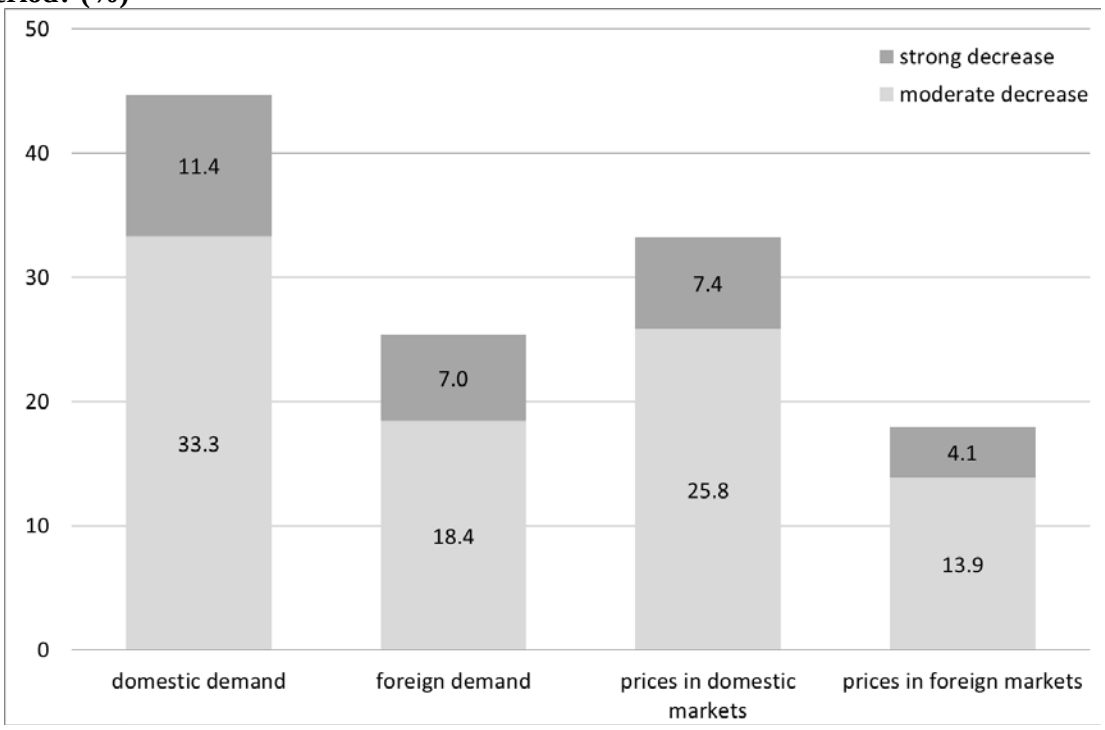
Did this decrease in demand was long-lasting or only temporary? Predictably given the severity of the downturn, the decrease in the level of demand was considered as long lasting by 40% of firms and partly persistent for 37% of them (Figure 8). Overall, less than 20% of firms respond that the decrease in some component of demand was transitory. In addition, the stronger the perceived shock, the more persistent it was. Among the 19.2% of firms which declare a strong demand shock and have decreased their activity, only 5% declare that this shock was transitory, against 15% for the firms which report a moderate demand shock.

Figure 8: For those factors which affected your firm strongly, were the effects transitory, partly persistent or long-lasting for the 2010-2013 period? (%)



Source: WDN Survey, Employment weighted distribution

Figure 9: How did prices and demand for your main product evolve during the 2010-2013 period? (%)



Source: WDN Survey, Employment weighted distribution

45% and 32% of firms have respectively experienced a decrease in demand and in prices in the domestic market (Figure 9). There is also a significant heterogeneity as 30% and 40% of firms indicate that domestic demand and prices have increased.

Confirming the evidence presented in table 2, firms in the construction sector are the ones who most often report a decrease in the domestic demand, as well in the domestic prices. As expected, this sector is less concerned with foreign demand or prices. This is the opposite for firms in the manufacturing industry which report more often increases or decreases of the foreign demand. The service sector is the one where the firms most often report an increase of their domestic demand. Small firms report less having experienced an increase of their domestic demand (around 24% versus 30% for larger firms). But this difference is to be related to the overrepresentation of construction firms within the small firms.

Table 3: Share of firms having experienced strong or moderate increases or decreases of their prices or demands

	Domestic demand		Foreign Demand		Price in domestic market		Prices in foreign market	
	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease
All firms	28.8%	44.7%	22.0%	25.4%	37.9%	33.3%	20.4%	18.0%
Sector								
Manufacturing Industry	25.7%	46.3%	34.6%	28.5%	41.0%	30.8%	33.8%	28.4%
Construction	13.5%	59.2%	6.7%	27.7%	14.8%	56.0%	3.7%	12.9%
Trade	27.9%	44.4%	17.2%	17.2%	40.5%	27.1%	19.5%	7.6%
Services	35.2%	40.2%	21.3%	27.3%	40.8%	32.0%	17.5%	18.8%
Size								
5-19 employees	23.2%	44.2%	16.8%	23.1%	35.0%	28.8%	17.1%	10.6%
20-49 employees	25.2%	44.8%	18.8%	26.7%	31.9%	32.9%	21.2%	16.9%
50-199 employees	32.1%	46.6%	24.1%	27.5%	39.6%	35.3%	20.9%	20.3%
200 and more	30.0%	42.1%	24.6%	22.7%	41.7%	33.3%	21.3%	20.0%

Source: WDN survey, Employment weighted distribution

The shocks that the French firms had to face were mainly related to their activity, which was mainly associated to a sluggish domestic demand. Firms in the construction were the most affected during the period 2010-2013. The difficulties faced by the firms do not seem to be related by a more difficult access to credit.

The crisis can have affected the productions costs by two channels: a direct one by impacting the prices of the inputs, and an indirect one by modifying their use of each input. Figure 10 shows that most firms indicate that total costs have increased moderately or strongly during the 2010-2013 period. Despite the increase in the unemployment rate and the implementation of the CICE tax credit in 2013, 80% of firms indicate that the increase in costs has reflected in part an increase in labour costs (Figure 10). In accordance with the previous results, less than 25% of firms indicate an increase in the financing cost. The fact that the share of firms which report an increase of their labour costs is higher than the share of the ones who report an increase of their total costs suggests that some (but few) of them might have decreased other costs to maintain their total costs similar.

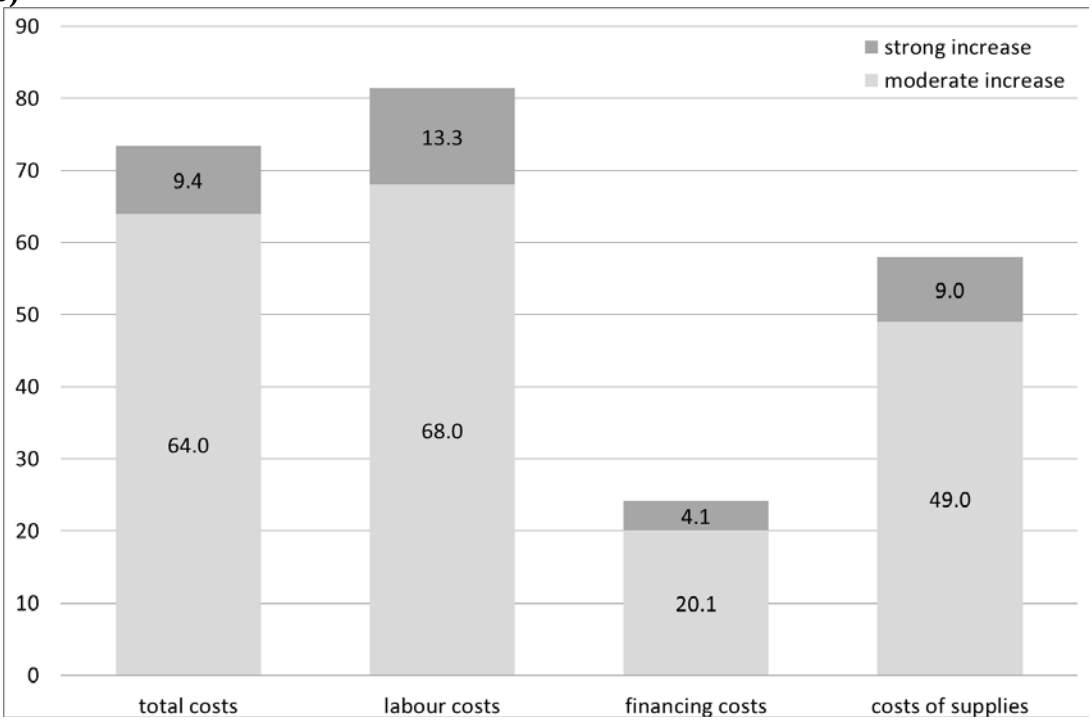
A very large share of firms report an increase of their total costs between 70% and 75% whatever their sector or their size (table 4). There is a little more variation concerning labour costs: firms in the construction or trade sectors report less often increases (75%) than services (85%). But in all cases, more than 75% of firms report an increase of these costs. There is more variability across sectors of the increase of the costs of supplies: only 50% of firms in the service industry report an increase of these costs, versus 69% in the manufacturing industry.

Table 4: Share of firms having experienced an increase of their costs

		Total Costs	Labour Costs	Financing Costs	Costs of supplies
All Firms		73.4%	81.4%	24.2%	58.0%
Sector	Manufacturing Industry	75.5%	82.7%	24.6%	69.0%
	Construction	70.7%	75.2%	26.5%	54.2%
	Trade	71.7%	75.9%	27.1%	62.1%
	Services	73.7%	85.1%	21.9%	50.5%
Size	5-19 employees	70.8%	80.2%	29.9%	62.3%
	20-49 employees	75.0%	79.9%	22.6%	58.0%
	50-199 employees	75.9%	81.2%	24.5%	61.1%
	200 and more	69.9%	83.5%	21.1%	50.3%

Source: WDN survey, Employment weighted distribution

Figure 10: How did these components of total costs evolve during the 2010-2013 period? (%)



Source: WDN Survey, Employment weighted distribution

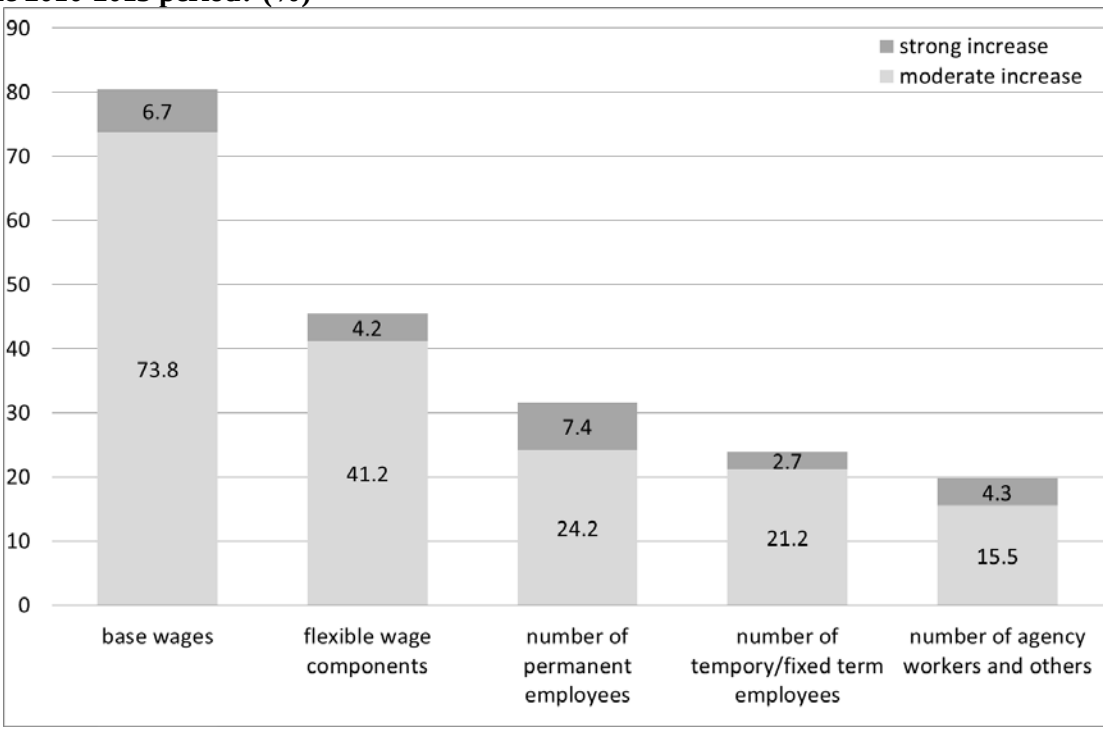
b. Adjustments strategies of the labour force

To tackle the tightening of demand, firms had to adjust their labour force. Here we investigate the way firms try to answer the challenges they had experienced to reduce labour costs or alter their composition, since they are the main contribution in the evolution of total costs, as pointed out above.

Figure 11 decomposes the changes in labour costs. For 80% of firms, the increase in labour costs has reflected an increase in base wages. More surprisingly, about 45% of firms also indicate an increase in the flexible part of their wages over the period.

While the evolutions of the base wages are not very correlated with the perceived demand shocks, this is not the case for the changes in the flexible wage components. Only 35% of firms which report a decrease in their activity have increased flexible wages against 55% for firms which report an increase in activity.

Figure 11: How each one of the components of labour costs listed below has changed during the 2010-2013 period? (%)



Source: WDN Survey, Employment weighted distribution

Table 5: Determinants of the changes of the components of the labour costs (ordered probit)

	Base wages	Flexible wage components	Number of permanent employees	Number of temporary/fixed term employees	Number of agency workers and others
Manufacturing					
Industry	-0.0607	0.0275	-0.0913	0.0731	0.1186*
Construction	0.0479	0.0989	0.00113	-0.0653	-0.1215
Trade	-0.1475**	-0.0907	-0.0709	-0.1138*	-0.0952
Services	Ref.				
5-19 employees	-0.1645**	-0.0941	-0.0964	-0.1340*	-0.1328*
20-49 employees	-0.0579	-0.2384***	0.0433	-0.1112	0.0419
50-199 employees	0.00665	0.0545*	-0.1460***	0.0705	-0.00724
200 and more	Ref.				
Increase of demand	0.1973	0.1317	0.4702***	0.0197	-0.2473**
Stability of demand	Ref.				
Decrease of demand	-0.0538	-0.3471***	-0.5943***	-0.3716***	-0.3108***

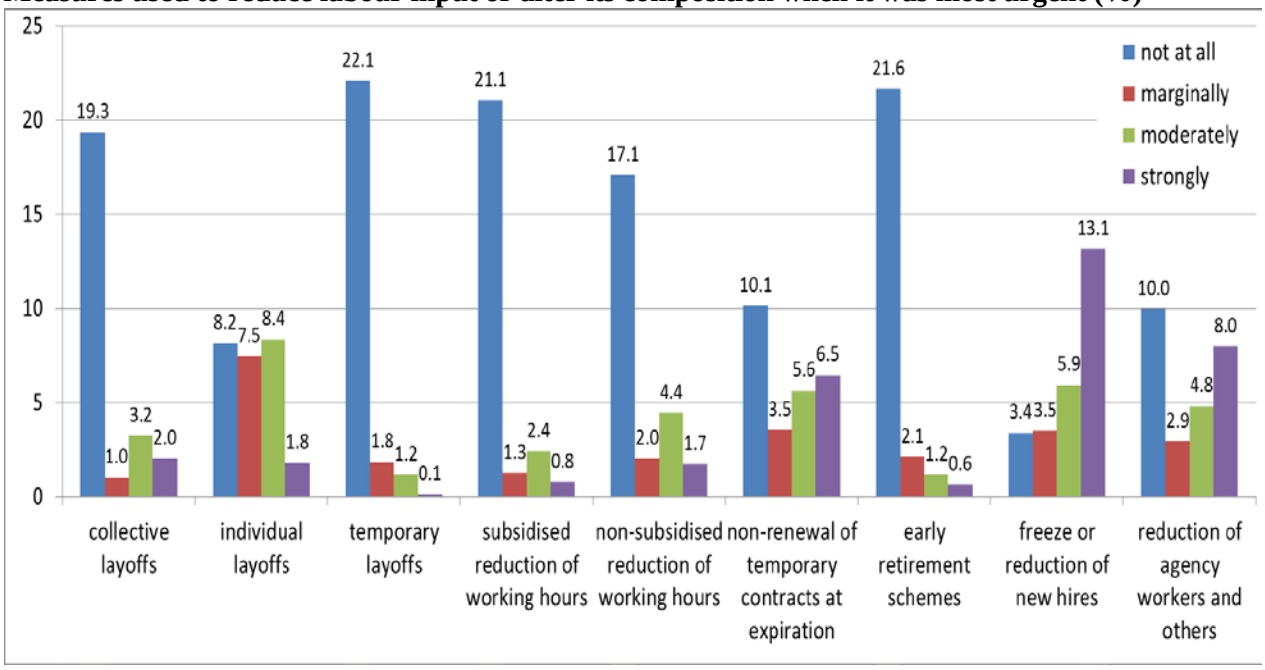
Note: Ordered probit. In each regression, control variables include also information on its structure, ownership, autonomy, age, workforce composition (share of skilled workers and more than 5 years tenure workers).
*Lecture: * significant at 10%, ** at 5%, and *** at 1%.*
Source: WDN Survey, employment weighted

These correlations are confirmed by an econometric analysis. Using an ordered probit model to examine the determinants of the evolution of the components of the labour costs, it

appears that the evolution of activity induced by the demand has not affected the change in base wages. This suggests that base wages were not responsive to changes in the activity of the firms and that strong downward wage rigidities were at play, as noticed by Askenazy et al. (2013). When it comes to flexible wage components, firms whose activity was negatively impacted by a decrease in their demand have decreased their flexible wage components. The correlation with the activity is the strongest for the number of permanent employees, since an increase of the demand is strongly associated with an increase of the number of permanent employees.

Following the decrease in demand, 27% of firms indicate they had to adjust their workforce. As expected, this proportion is much higher for firms with a negative demand shock (35%) than for firms with a positive demand shock (12%). For firms that needed to reduce labour inputs, collective layoffs were relatively rare with respect to other modes of adjustments and were used by only 6.2% of firms (Figure 12). In contrast, 18% of firms have used individual layoffs. More importantly, 23% of firms have stopped hiring. In addition, as expected in a dual labour market such as France, 15% of firms have adjusted labour inputs by not renewing temporary contracts or agency workers.

Figure 12: Among firms which need to reduce labour cost or alter its composition; Measures used to reduce labour input or alter its composition when it was most urgent (%)



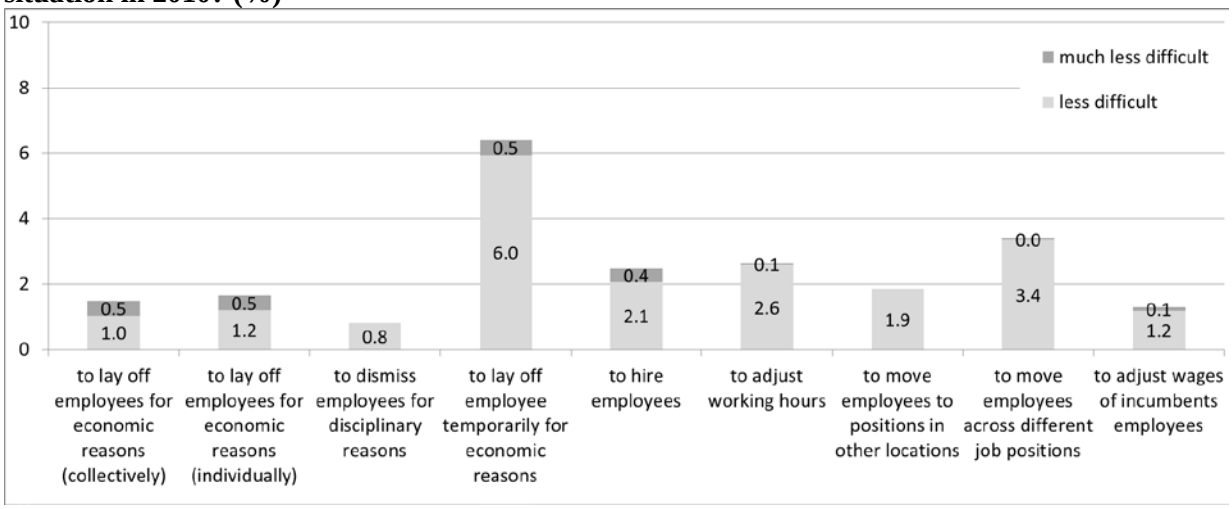
Source: WDN Survey, Employment weighted distribution

c. Structural rigidities, and changes in labour market conditions

The way firms could adjust to their economic environment was highly influenced by the institutional characteristics of the labour market. Here we focus on the difficulties met by the firms to adjust their workforce during the crisis.

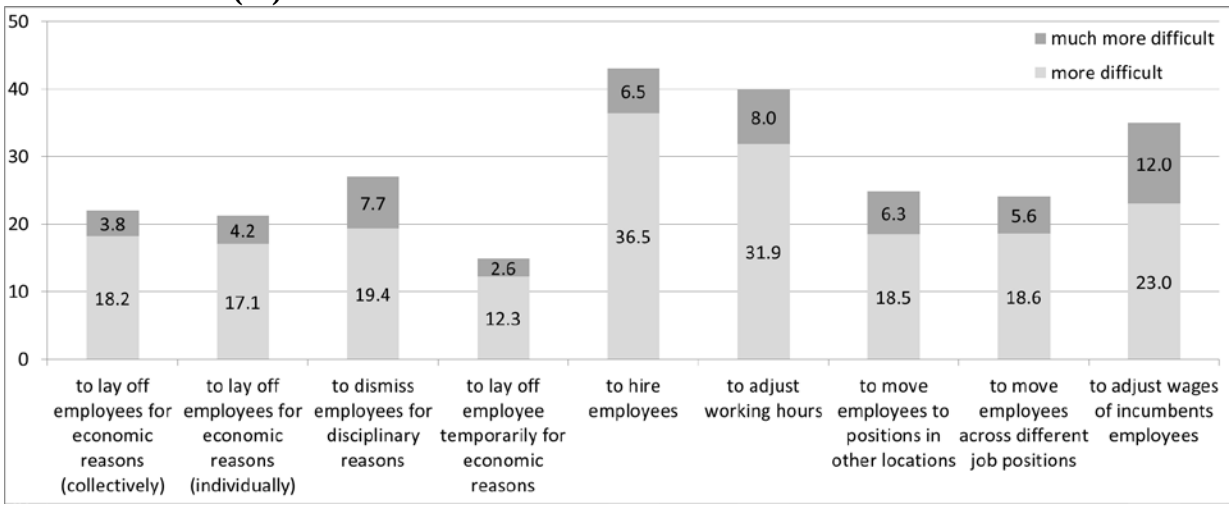
In accordance with the absence of major reforms, few firms indicate an increased flexibility in the adjustment of labour costs, either through employment or wages (Figure 13 and 14). On the contrary, 40% of firms indicate that it has become *more* difficult to adjust working hours and 35% of them indicate an increased difficulty in adjusting wages of employees.

Figure 13: Have any of the following actions become more or less difficult, compared to the situation in 2010? (%)



Source: WDN Survey, Employment weighted distribution

Figure 14: Have any of the following actions become more or less difficult, compared to the situation in 2010? (%)



Source: WDN Survey, Employment weighted distribution

An important issue is that, in spite of the large increase in the number of unemployed workers, firms nevertheless indicate that it has become more difficult to hire employees. This last result is consistent with the recent research suggesting an increase in structural unemployment in the French labour market (see Maravalle et al., 2014): a combination of increase in both unemployment and difficulties to hire suggest that the characteristics of many unemployed workers do not currently correspond to the needs of firms.

Table 6: Determinants of the difficulties perceived by firms (ordered probit)

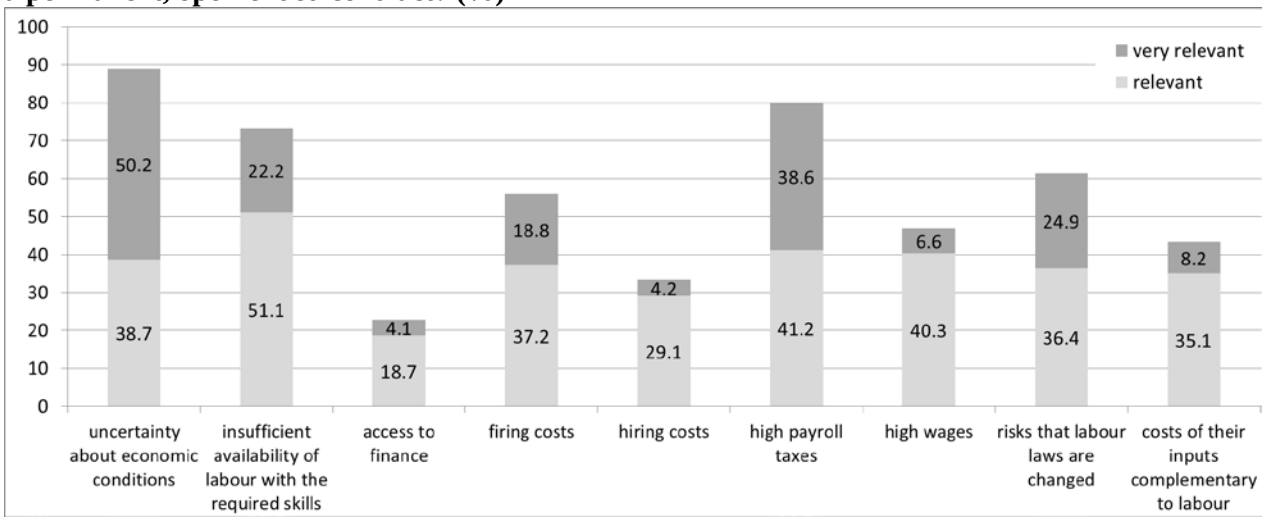
	Hire employees	Adjust working hours	Adjust wages of incumbent employees
Manufacturing			
Industry	0.0902	-0.1147	-0.0998
Construction	-0.1422	-0.2356***	-0.1185
Trade	0.0677	0.0319	-0.0506
Services	Ref.		
5-19 employees	0.0964	0.1034	-0.0709
20-49 employees	0.0358	-0.1022	0.0880
50-199 employees	0.0430	0.0608	0.1918***
200 and more	Ref.		
Increase of demand	0.2054*	-0.0494	-0.1096
Stability of demand	Ref.		
Decrease of demand	0.1842*	0.2304**	0.2962**

Note: Ordered probit. In each regression, control variables include also information on its structure, ownership, autonomy, age, workforce composition (share of skilled workers and more than 5 years tenure workers).
*Lecture: * significant at 10%, ** at 5% and *** at 1%.*
Source: WDN Survey, employment weighted

Table 6 presents the determinants of the three most important concerns of the firms regarding their difficulties (figure 14): hiring employees, adjusting working hours and adjusting wages. Each one of these concerns is quoted by more than 30% of the firms as having become more difficult. It appears first that firms which declare facing a decrease of demand report more often greater difficulties for any proposed actions in the survey. This may be related to the fact that such firms which have adopted these actions had a direct experience of their drawbacks, while those which did not face such a decrease report fewer difficulties to implement then. The only exception lies in the difficulty to hire employees, since both firms which report a decrease or an increase of demand report higher difficulties for this action.

Given the current unemployment crisis, it is important to understand the main factors that have prevented firms from hiring employees. Their answer indicates that uncertainty about economic conditions is relevant or very relevant for more than 90% of them. Labour costs also play a major role in preventing job creation. High payroll taxes and high wages are judged as preventing job creation by respectively 80% and 46% of firms. Interestingly, more than 60% of firms judge that political uncertainties captured by the risk that labour laws are changed are detrimental for their hiring decisions.

Figure 15: How relevant is each of the following factors as obstacles in hiring workers with a permanent, open-ended contract? (%)



Source: WDN Survey, Employment weighted distribution

In addition, the results also confirm that structural unemployment might have increased in the French labour market: the insufficiently availability of labour is judged as preventing job creation by 70% of firms.

Table 7 reports the results of an econometric model (ordered probit) explaining how relevant a factor is in hiring workers with a permanent contract, the main explanatory variables being the sector, the size and the evolution of demand. Only the factors which more than 50% of firms report to be relevant are presented in the table. It shows that the uncertainty about economic condition, as well as firing costs and high payroll taxes are mostly cited by firms which have experienced a decrease in their demand, and among small firms. Conversely, the insufficient availability of labour with required skills is more often considered as an obstacle to hiring in

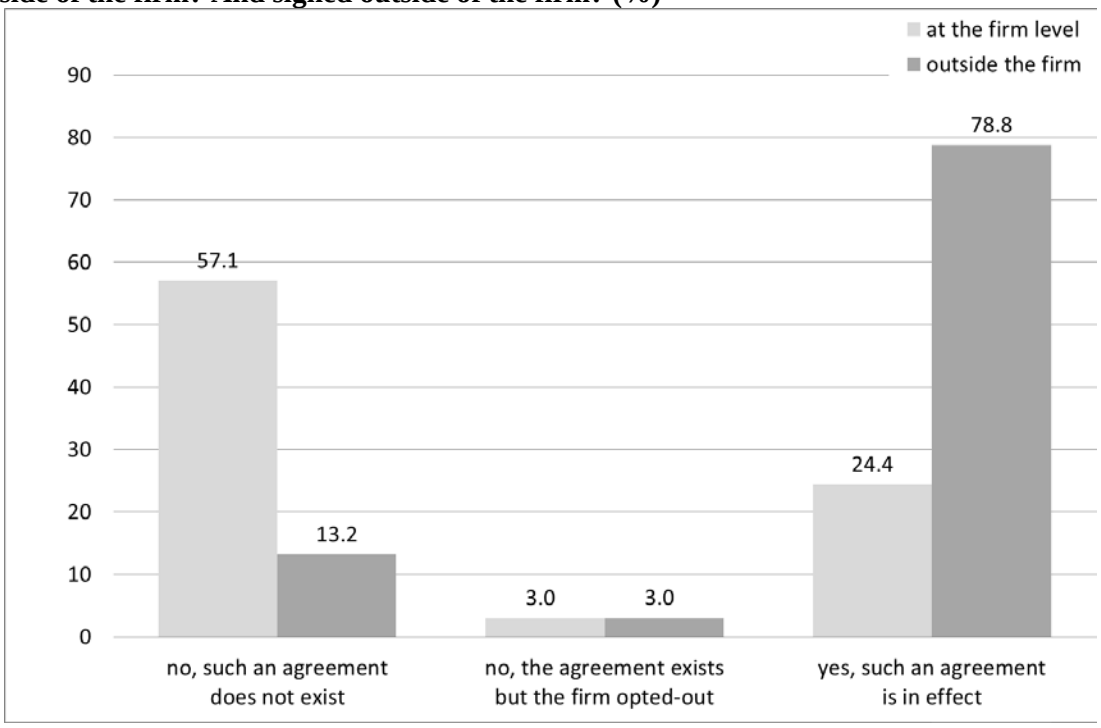
services, by larger firms (between 20 and 199 employees) and by firms whose demand has not decreased.

Table 7: Obstacles of some factors in hiring workers (ordered probit)

	Uncertainty about economic conditions	Insufficient availability of labour with required skills	Firing costs	High payroll taxes	Risks that labour laws are changed
Manufacturing Industry	-0.1075	0.0140	0.0134	-0.0725	-0.1021
Construction	0.3227***	0.0450	-0.0326	0.1375	0.0752
Trade	-0.0477	0.1143*	0.0678	-0.0404	-0.0412
Services	Ref.				
5-19 employees	0.2203***	0.0636	0.2884***	0.3216***	0.1657**
20-49 employees	-0.1100	0.2171***	0.0941	0.0883	-0.0321
50-199 employees	0.0599	0.1357**	-0.1560***	-0.1730***	0.0456
200 and more	Ref				
Increase of demand	0.1322	-0.0726	-0.0532	0.00237	-0.2342**
Stability of demand	Ref				
Decrease of demand	0.5817***	-0.2093**	0.3238***	0.2455**	0.0636

Note: Ordered probit. In each regression, control variables include also information on its structure, ownership, autonomy, age, workforce composition (share of skilled workers and more than 5 years tenure workers).
*Lecture: * significant at 10%, ** at 5% and *** at 1%.*
Source: WDN Survey, employment weighted

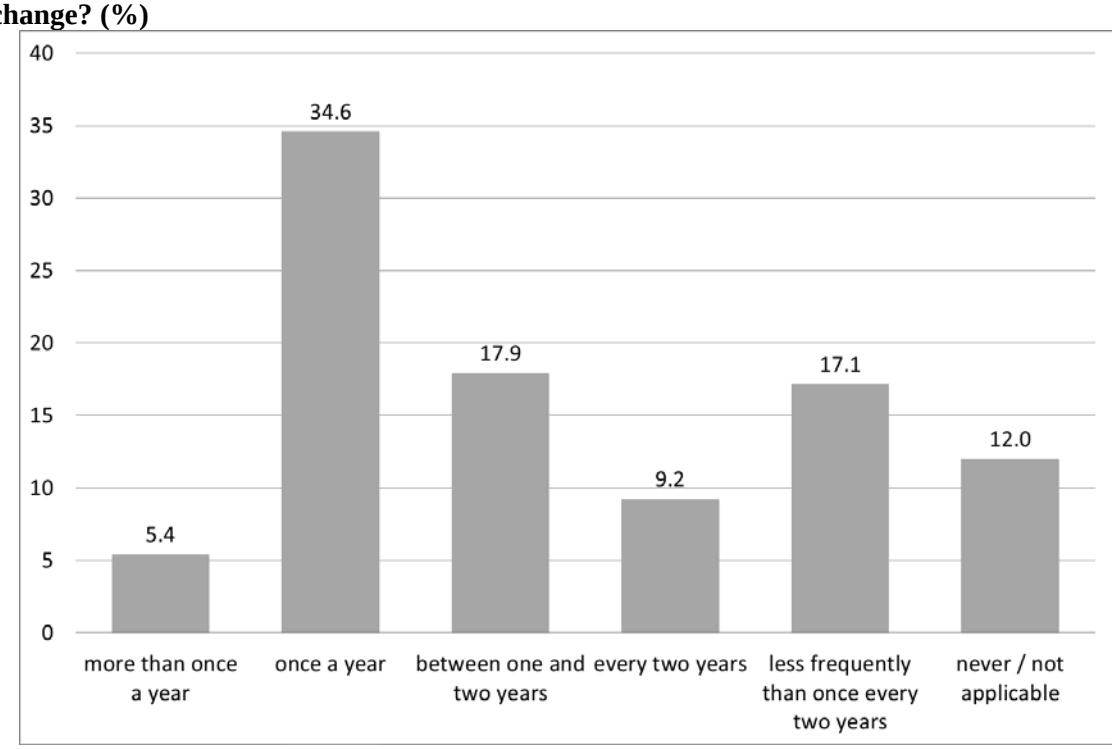
Figure 16: In 2013, did your firm apply a collective pay agreement bargained and signed inside of the firm? And signed outside of the firm? (%)



Source: WDN Survey, Employment weighted distribution

To a large extent, some patterns of wage adjustment are driven by labour institutions such as collective pay agreements (Avouyi-Dovi et al., 2013; Fougère et al. 2015). In 2013, all firms indicate that a collective pay agreement existed, most of the time bargained and signed **outside the firm** (80%) while 25% of firms report that an agreement existed within the firm. Such collective pay agreements were adjusted once a year for 35% of firms (Figure 17). We can use this variable to estimate the effect of the frequency of collective pay agreement changes on the perception of the firms about their base wage increases (cf. table 8). The existence of collective pay agreements does not seem to be significantly correlated with the changes of base wages or flexible wage components. However, firms where such collective pay agreements were changed less frequently than once a year report less increases of their base wages or flexible wage components.

Figure 17: How often does the collective pay agreement applied at your firm typically change? (%)



Source: WDN Survey, Employment weighted distribution

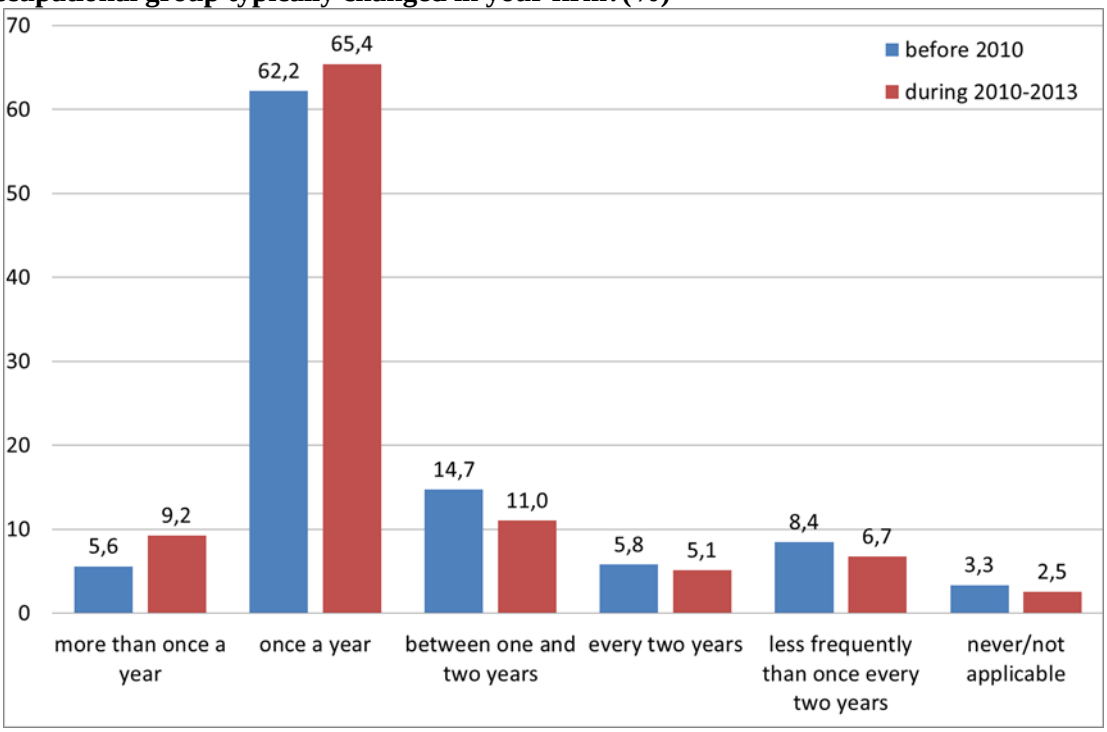
Table 8: Effects of collective pay agreements and their frequency on the changes of components of the labour costs based on wages (ordered probit)

	Base Wages	Flexible Wages
Manufacturing Industry	-0.0636	0.0316
Construction	0.0292	0.0703
Trade	-0.1448*	-0.0824
Services	Ref.	
5-19 employees	-0.1645**	-0.1141
20-49 employees	-0.0586	-0.2401***
50-199 employees	0.00355	0.0715
200 and more	Ref.	
Increase of demand	0.2023	0.1349
Stability of demand	Ref.	
Decrease of demand	-0.0437	-0.3303***
Collective pay agreement inside the firm	-0.0557	-0.0102
Collective pay agreement outside the firm	0.0842	-0.0915
Change of collective pay agreement		
Once a year or more	Ref.	
Less frequently than once every year	-0.1292**	-0.1113**
Never/nota applicable	0.1071	0.1712**

Note: Ordered probit. In each regression, control variables include also information on its structure, ownership, autonomy, age, workforce composition (share of skilled workers and more than 5 years tenure workers). These regressions are similar to these presented in Table 5. Only the collective pay agreements variables have been added.
*Lecture: * significant at 10%, ** at 5% and *** at 1%.*
Source: WDN Survey, employment weighted

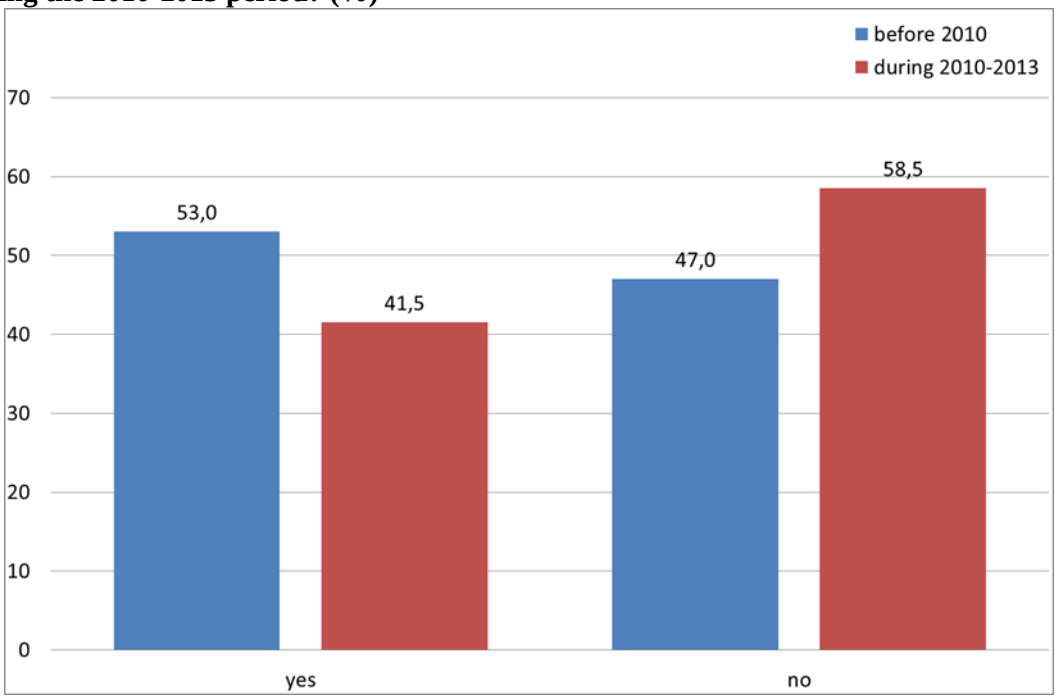
Accordingly, 60% of firms indicate that they adjust the base wage once a year. This proportion has not changed substantially after 2010: if anything, there was a 3 p.p. decrease in the share of firms which report to have adjusted wages more than once a year.

Figure 18: How frequently was the base wage of an employee belonging to the main occupational group typically changed in your firm?(%)



Source: WDN Survey, Employment weighted distribution

Figure 19 a): Did your firm adapt changes in base wages to inflation before 2010? And during the 2010-2013 period? (%)



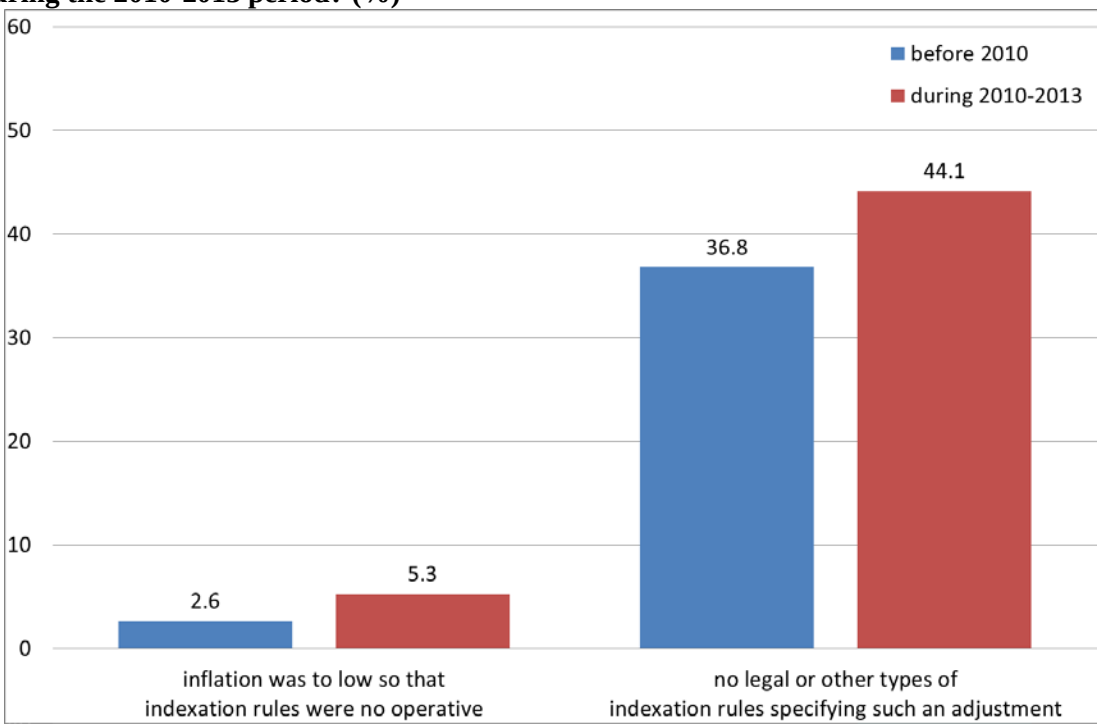
Source: WDN Survey, Employment weighted distribution

The role of inflation in wage adjustments is documented in Figures 19 a) and b). Since 2009, inflation significantly has fluctuated in France with a zero increase in 2009 and about 2%

annual increase during the 2010-2013 period. About 50% of firms indicate they have changed their base wage in relation to inflation before 2010 but that proportion decreased by 11.5 p.p. during the 2010-2013 period.

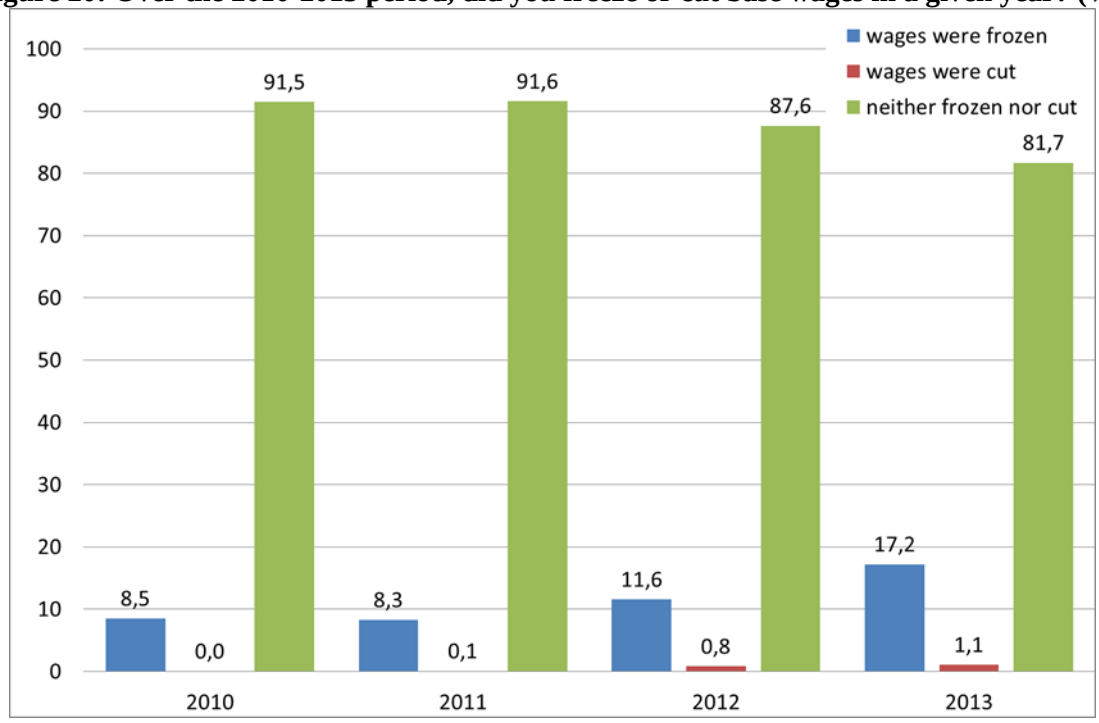
For the subset of firms which declare they have not adapted their base wages to inflation, the main reason is that no legal or other type of indexation specified such adjustment (Figure 19 b).

Figure 19 b): Did your firm adapt changes in base wages to inflation before 2010? And during the 2010-2013 period? (%)



Source: WDN Survey, Employment weighted distribution

Figure 20: Over the 2010-2013 period, did you freeze or cut base wages in a given year? (%)



Source: WDN Survey, Employment weighted distribution

Finally, consistent with the previous evidence that labour costs have increased through an increase in base wage, wage freeze has remained relatively rare but the proportion of firms declaring to have frozen base wage was multiplied by 2 between 2010 and 2013, from 8 to 17% (Figure 20).

5. Conclusion

The period of economic turbulence which started in 2009 is not yet over. With a high and persistent level of unemployment in France, an important question is what type of policies could improve the economic environment of firms and increase employment. The results from the WDN survey presented here provide some useful insights on these issues.

The results indicate no presence of general credit rationing during the 2010-2013 period. The decrease in economic activity reflected mostly a decrease in demand addressed to firms. Importantly, most firms indicate an increase in costs over the period, particularly labour costs. This suggests that the implementation of the CICE in 2013 had not been able to reverse this trend. Firms also indicate an increase in the difficulties of hiring qualified employees which suggests the presence of structural unemployment.

We draw two key lessons from these results. First, French firms seem to suffer from both wage rigidities which prevent rapid adjustments of labour costs and relatively high labour costs which tend to deter hiring. This suggests that reforms aimed at making wages more flexible and decreasing the labour costs should be a first order priority.

Second, the increased difficulties in finding employees while unemployment grew indicate that the characteristics of many unemployed do not coincide with the demand of firms. To reduce structural unemployment, wage flexibility would also help as long unemployment duration depreciates the human capital of unemployed workers. More efficient training policies may improve the human capital of long-term unemployed.

Finally, a worrying issue is that the risk that labour laws are changed is judged as being significantly deterring employment. This suggests a relative lack of predictability of labour market institutions in France by firms. In that sense, recent reforms designed to reduce uncertainty and simplify labour relations are a useful step in the right direction.

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Appendix: supplementary tables

Table A1: How did the following factors affect your firm's activity during the 2010-2013 period?

	strong decrease	moderate decrease	unchanged	moderate increase	strong increase
level of demand	19.20	35.06	13.70	23.83	7.22
Volatility	10.57	27.92	33.92	16.59	9.45
access to external financing	5.34	12.40	72.24	7.48	0.80
costumers' ability to pay	9.67	38.85	44.23	5.41	0.40
availability of supplies	2.26	13.42	79.32	3.17	0.13

Source: WDN Survey; Employment weighted distribution

Table A2: With regard to finance. please indicate for the 2010-2013 period how relevant were for your firm each one the following happenings

	not relevant	of little relevance	relevant	very relevant
not available to finance working capital	68.2	17.3	8.6	3.8
not available to finance new investment	64.9	18.2	10.0	4.3
not available to refinance debt	73.2	13.8	7.0	3.2
available to finance working capital, but too onerously	69.5	20.1	6.0	1.3
available to finance new investment, but too onerously	68.5	20.9	6.5	1.3
available to refinance debt, but too onerously	75.2	15.9	4.8	1.3

Source: WDN Survey; Employment weighted distribution

Table A3: How did these components of total costs evolve during the 2010-2013 period?

	strong decrease	moderate decrease	unchanged	moderate increase	strong increase
total costs	1.5	8.9	14.4	64.0	9.4
labour costs	0.9	5.4	11.3	68.0	13.3
financing costs	3.8	23.8	45.7	20.1	4.1
costs of supplies	0.3	7.7	31.9	49.0	9.0

Source: WDN Survey; Employment weighted distribution

Table A4: How each one of the components of labour costs listed below has changed during the 2010-2013 period?

	strong decrease	moderate decrease	unchanged	moderate increase	strong increase
base wages	0.26	1.62	16.44	73.76	6.66
flexible wage components	3.24	8.69	41.13	41.22	4.21
number of permanent employees	6.85	24.3	36.39	24.21	7.42
number of tempory/fixed term employees	6.21	12.61	55.33	21.2	2.72
number of agency workers and others	10.58	10.07	57.31	15.51	4.3

Source: WDN Survey; Employment weighted distribution

Table A5: How relevant is each of the following factors as obstacles in hiring workers with a permanent. open-ended contract?

	not relevant	of little relevance	relevant	very relevant
uncertainty about economic conditions	2.5	6.3	38.7	50.2
insufficient availability of labour with the required skills	7.1	17.0	51.1	22.2
access to finance	28.7	45.2	18.7	4.1
firing costs	15.2	26.0	37.2	18.8
hiring costs	17.5	46.0	29.1	4.2
high payroll taxes	6.3	12.2	41.2	38.6
high wages	9.0	41.2	40.3	6.6
risks that labour laws are changed	9.1	27.1	36.4	24.9
costs of their inputs complementary to labour	15.6	36.8	35.1	8.2

Source: WDN Survey; Employment weighted distribution

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