conseil d'analyse
économique
French Council of Economic Analysis

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Wage Dynamics in Times of Crisis

Les notes du conseil d'analyse économique, no 5, April 2013

Since the financial crisis of 2008, a gap has been growing in France between labour productivity, which tends to stagnate, and wages, which continue to rise. This discrepancy raises fears of further deterioration in the employment situation. One fact is clearly established: real wages have not declined in France since the beginning of the crisis. Since 2008, the average real net wage in France has continued to grow at an annual rate of 0.8% in the private sector. A quarter of this growth is due to a «composition effect»: job cuts have primarily affected employees receiving low remuneration. The remaining three quarters are due to an increase in remuneration of those retaining their jobs. However, unlike the pre-crisis period, these increases mainly benefit employees with remuneration close to the median wage, rather than those with very low or very high wages.

Wage trends in France are not comparable to those of its principal European partners: real wage growth is slowing in the Netherlands and decreasing in Italy, Spain and especially in the UK where inflation is much higher. Nevertheless, Germany remains an exception: wages there are recovering, but in the wake of a stagnation that preceded the crisis.

These wage dynamics in France have their origins as much within firms as in the institutions of the labour market. First, many surveys of business leaders in France and abroad indicate that firms are reluctant to restrain their practices concerning wages. To preserve employee motivation and a positive atmosphere at the workplace, two key determinants of productivity, firms prefer job reductions to wage reductions. Second, the institutions of the French labour market, in particular the modalities of setting wage minima and of funding social protection, also play a role in wage dynamics. In addition to the guaranteed minimum growth wage (SMIC, *Salaire Minimum Interprofessionnel de Croissance*), industry-wide agreements, which cover nearly 90% of private sector employees, define wage minima for most employees; their bargaining induces strong repercussions. Moreover, social protection is primarily funded by levies on wages; this induces a significant difference between net wages and labour costs.

Based on this analysis, three types of measures could facilitate the adjustment between wage dynamics and productivity trends: increasing coordination between bargaining concerning remuneration, employment and working conditions, envisaging broader and more concerted recourse to derogation clauses; clearly linking the funding of social protection to a specific tax base; and developing the political consensus in the eurozone in favour of a temporarily more accommodative monetary policy.

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Introduction

Between 2008 and 2012, the unemployment rate in France increased by more than three percentage points, reaching 10.6% of the working population in 2012. However, this abrupt deterioration of the labour market has not yet led to a slowdown in wages, as might have been expected: in the private sector, no effect has been observed on the average real net wage in the wake of the crisis. This development is of concern since, as we shall see in this *Note*, productivity has stagnated since the beginning of the crisis and the increase in wages is therefore not justified by firms' difficulties in recruitment, nor by increased employee productivity. In fact, the contrary is occurring, as if, collectively, the social partners have chosen to respond to the crisis in adjusting quantities (reducing employment) rather than prices (by limiting remuneration). If this trend becomes established, it has two unfavourable aspects: first, it jeopardises the effectiveness of the tax credit for encouraging competitiveness and jobs creations (CICE, *Crédit Impôt Compétitivité Emploi*) in reducing labour costs in the long term, and second and more importantly, it makes it very difficult to reverse unemployment trends in the medium term.

In this Note, we will first investigate whether this diagnosis is realistic, and whether it is specific compared with trends observed in other European countries. Then, we will analyse the possible causes and propose potential economic policy implications.

Wage trends during the crisis

Before analysing wage trends, we must define three indicators: gross wages (part of the employment contract), net wages (received by the employee), and super-gross wages (gross wages plus the employer's tax payments and social contributions). These indicators may vary differently over time depending on how increases in mandatory levies on wages are split between employees and employers (see Box 1).

To provide an accurate diagnosis of wage trends, we will make a distinction between the private and public sectors. Institutional constraints differ greatly between the two sectors. Moreover, it is very difficult to measure the productivity of public employees, as their activity does not generally result in a product to be sold, making it difficult to assess a value for that activity; for these employees, the gap between remuneration and productivity cannot be stated in the same terms.

1. Measuring wages: from the net wage to labour costs

The **gross wage** is the total amount received by the employee under his employment contract, before deduction of employee tax payments and social contributions.

The **net wage** is the amount the employee actually receives. In France, it is net of all tax payments and social contributions, including the CSG and CRDS (*Contribution au remboursement de la dette sociale*, social debt reimbursement tax). In countries where the income tax is deducted at the source (such as Germany and the United Kingdom), net wages are also net of income tax.

Super-gross wages consist of gross wages plus the employer's effective social contributions, taxes on wages (substituted by the VAT in certain activities) and all non-wage benefits provided by the employer to its personnel (such as supplementary medical insurance).

The concept of **labour costs** is less well defined. Statistical sources define it in various ways. The broadest definition includes all expenses incurred by the employer for the employment of its personnel: wages, social contributions and payroll taxes net of subsidies, training expenses, purchases of clothing and equipment, costs of dismissal and recruitment, etc. For comparative purposes, this Note uses the OECD's definition, which includes wages and other remuneration, bonuses, payments for work-related services (e.g. food, lodging, petrol), severance and end-of-contract payments, and employers' contributions to pension plans, life insurance and benefit plans.

Unit labour costs relate the hourly labour costs to productivity per hour, thereby reflecting the gap between what a company pays an employee and what the employee provides to the company.

Each of these concepts can be expressed in **nominal or real terms**. For example, the gross nominal wage is the amount shown on the employee's pay slip; the gross real wage is the gross nominal wage divided by the price index. Trends in gross real wages therefore take inflation into account and correspond to the purchasing power of the employee's remuneration.

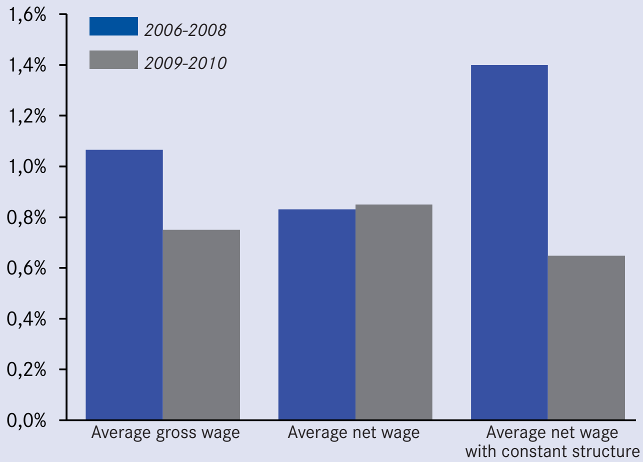
We thank Manon Domingues Dos Santos, Maty Konte and Claudia Senik for their help and advices and the DARES and INSEE for the transmission of certain datas.

Remuneration in the private sector

In the private sector, growth of *gross nominal wages* slowed sharply in conjunction with the crisis: their growth rate, which had been 3% on average from 2005 to 2008, was only 1.5% in 2009-2010.[1] However, this slowdown can only be interpreted in view of trends in prices and productivity.

To account for inflation, we must focus on real wage: the nominal wage adjusted to consider what it can purchase. The dynamics of real wages simultaneously reflect trends in employees' purchasing power and in average employee return for a firm with a given productivity level.[2] Figure 1 shows trends in real wages in the private sector in France by comparing the pre-crisis period (2006-2008) with the post-crisis period (2009-2010). The annual growth in average real wages is positive throughout the period, but remains relatively moderate. The growth rate dropped from 1.1% on average before the crisis to 0.7% afterward: the slowdown was abrupt but more moderate than for nominal wages, because inflation dropped as well.

1. Annualised growth of average real wages and composition effects in the private sector



Data: Private sector employees (excluding apprentices and trainees, agriculture, employees of private individuals). The data (in full-time equivalents) includes all gross remuneration received. The consumer price index is used as a deflator.

Sources: Bichler G. and R. Kerjosse (2012): «En 2010, les salaires ralentissent en euros constants,» *INSEE Première*, no. 1403, June and DADS data.

And *net real wages* –gross wages net of tax payments and social contributions *(cf.* Box 1)– were barely affected by the crisis, with annual growth on the order of 0.8% both before and after 2008. Most of the differences in trends between gross and net wages can be explained by the increase in contributions levied on wages during the period 2006-2008.

Observation 1: There is no evidence that the crisis affected the average *net real wage* for private sector employees.

Two phenomena are responsible for trends in the average wage. First, the average wage can vary due to trends in wages earned by workers who remain continuously employed. Second, the average wage can change if wages for jobs that are gained or lost differs from wages for jobs that are retained, a phenomenon known as a *composition effect.* If, for example, employees who lose their jobs during a recession are, on average, less qualified, and therefore receive less remuneration than those who retain their jobs, this job loss tends to raise the average wage, although the wage of individuals who retained their jobs has not necessarily increased. To understand the contribution of this composition affect, we make use of detailed data to calculate how net real wages would have changed if the composition of employment by gender, age, socio-professional category, industry and employment conditions had remained unchanged (last two histograms in Figure 1). It appears that, if employment structures are kept constant, the growth of net real wages over the post-crisis period is no more than 0.6%, as compared to 0.8% if we do not take the composition effect into account. Part of the increase in wages observed over this period can therefore be explained by the fact that job losses particularly affected lesser-qualified individuals. Wages for those retaining their jobs had slightly slower growth after the crisis than before.[3]

Observation 2: Part of the apparent increase in *net real wages* in the private sector in 2009-2010 (about 0.2%, within a total of 0.8% per year) is due to a composition effect, since job cuts primarily affected employees receiving low remuneration.

Finally, the average trends illustrated by Figure 1 mask trends that are quite different, depending on the remuneration level. Figure 2 shows trends in *real gross hourly wages* (including bonuses and other supplementary remuneration) by centile (i.e. for each percent of the wages distribution in the private sector). Two important facts emerge. First, wage growth from 2005-2008 was mainly driven by low-wage jobs (particularly because of the increase in the SMIC and less frequent use of derogations) and by high-wage jobs (with the two highest centiles contributing as much to the average as the lowest 14). The crisis period has an inverse profile: remuneration stopped rising for the highest wage earners. Low wage earners were affected by the downturn and by the decline in real value of the SMIC (Table 1) and a more frequent use of derogations concerning the minimum wage (e.g. young workers).

[1] See Bichler G. and R. Kerjosse (2012: « En 2010, les salaires ralentissent en euros constants », *INSEE Première*, no. 1403, June, and Figure 1.

[2] In principle, we compare wages to the consumer price index to determine purchasing power, and to the producer price index for the real labour costs. Except in special cases, the two price indexes change in concert with each other; therefore, in this Note we refer to the consumer price index.

[3] We note that before the crisis, it is an inverse composition effect that dominated and annual growth of net wages was 1.4% in constant terms.

However, the dynamics of remunerations between the third and eighth deciles does not seem to have been affected by the crisis.

2. Annualised growth of real gross hourly wages according to wage distribution in the private sector
In %

Interpretation: Employees are divided into 100 centiles, each representing the same proportion of employees; P1 corresponds to the 1% having the lowest hourly wages, P99 to the 1% with the highest wages.

Data: Private sector employees (excluding apprentices and trainees, agriculture, employees of private individuals). The data includes all gross remuneration received. The consumer price index is used as a deflator.

Source: DADS Panel, 2005-2010, INSEE.

Observation 3: The slowdown in *gross real wages* in the private sector after the crisis was mainly due to lower growth in wages at the very lowest and highest levels.

We now need to integrate employer contributions into the analysis in order to examine the *super-gross wage* (*cf.* Box 1) and compare its trend to that of apparent productivity (production per hour of work). The respective trends in these two indicators allow us to understand the relative trend in cost and productivity of labour for firms; this largely determines their decisions to add or cut jobs. Figure 3 clearly shows that the financial crisis of 2008 opened a significant gap between the *real super-gross wage,* which continued to grow at its pre-crisis rate, and apparent productivity, which stagnated after declining in 2008 and 2009. This difference between trends in productivity and wages is a major cause of job destruction, which seems to serve as an adjustment variable, rather than wages.

Observation 4: In the wake of the crisis, the *real super-gross wage* in France is growing faster than labour productivity; this gap is a major cause of decline in employment.

1. Trends in gross hourly SMIC and consumer prices
Year-over-year at year-end, in %, 2005-2012

	2005	2006	2007	2008	2009	2010	2011	2012
Nominal SMIC	5.5	3.0	2.1	3.2	1.3	0.5	3.7	2.3
Consumer price index	1.5	1.5	2.6	1.0	0.9	1.8	2.5	1.3
Real SMIC	+ 4.0	+ 1.5	- 0.5	+ 2.2	+ 0.4	- 1.3	+ 1.2	+ 1.0

Source : INSEE.

3. Apparent productivity and super-gross real wages in the private sector
1990-2011

Data: Financial and non-financial corporations.

Interpretation: Apparent productivity is measured by the value added per full-time employee equivalent. Super-gross wages are also in terms of full-time employee equivalents. The consumer price index is used as a deflator.

Sources: French national accounts database- base 2005 and INSEE.

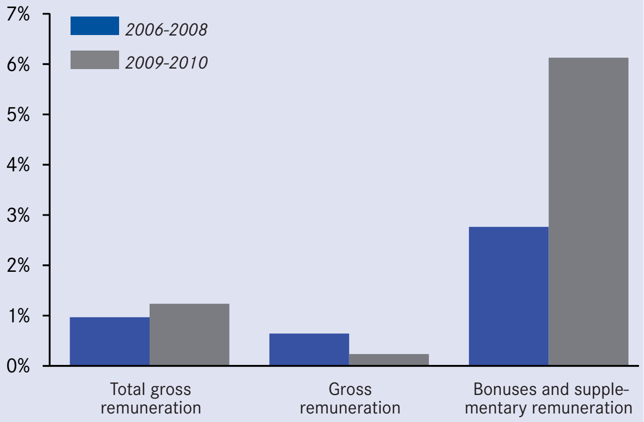
Remuneration in the public sector

Public sector wages are determined according to institutional constraints that differ from those of the private sector. Therefore, it is often said that public sector remuneration is counter-cyclical: it increases less rapidly than that of the private sector during expansion and vice-versa during a recession. The recent crisis is no exception: the increase in total gross remuneration for public employees in national services (*Fonction publique d'État*, FPE) has been greater in the post-crisis period (+ 1.2% per year in real terms in 2009-2010) than in the preceding period (+ 1% in 2006-2008). The policy to set the index value for their wages could have contributed to a slowdown, or even a decline, in the remuneration of employees in real terms. This was the case in 2010 for public employees in hospitals and in regional or local services (*Fonction publique territoriale*, FPT), where average full-time real wages decreased by 0.6 and 0.2% respectively; this was not the case for FPE employees.[4] These figures

[4] DGAFP (2012): *Rapport annuel sur l'état de la fonction publique*.

are explained by a sharp increase in bonuses and other supplementary remuneration (6.1% real growth for 2009-2010), which more than offset the stagnation of gross remuneration in real terms (Figure 4).

4. Average annual growth of real remuneration for national government employees (FPE)



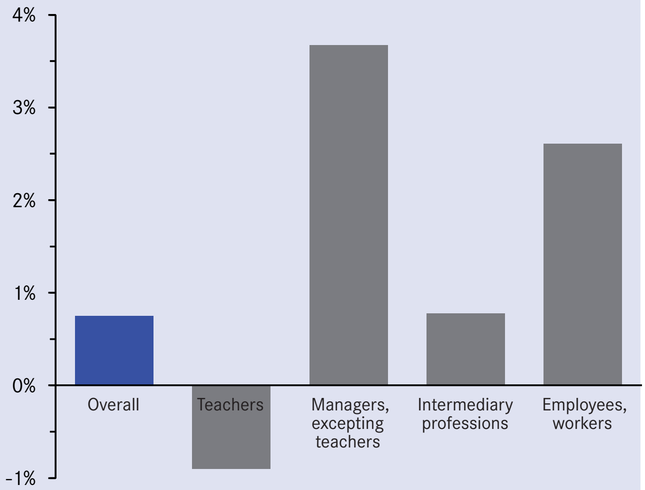
Interpretation: Data available for 2010 concerns only permanent staff, while data for the years 2002-2009 concerns all FPE employees. Data is expressed in annualised full-time equivalents.

Source: *Rapports annuels de la fonction publique*, DGAFP.

The increase in bonuses took place in the context of the general review of public policies (*Révision générale des politiques publiques*, RGPP), providing remuneration from a portion of the savings generated by job reductions. Conversion of increased remuneration into bonuses and supplementary remuneration gave rise to different trends, depending on the employee category (see Figure 5).[5]

Observation 5: Real remuneration for employees in the public sector continued to grow at a rate of 1% per year after the crisis despite the wage index freeze, due to the increase in supplementary remuneration.

5. Real growth of total net remuneration in the FPE
2010



Source: *Rapports annuels de la fonction publique*, DGAFP.

Is France an isolated case?

If wage growth only changed slightly in France after the crisis, what happened in other developed countries, particularly in the eurozone? Figure 6 compares the annualised growth in *real hourly labour costs* before and after the onset of the crisis in France and in nine developed countries, seven of which are in the eurozone.[6]

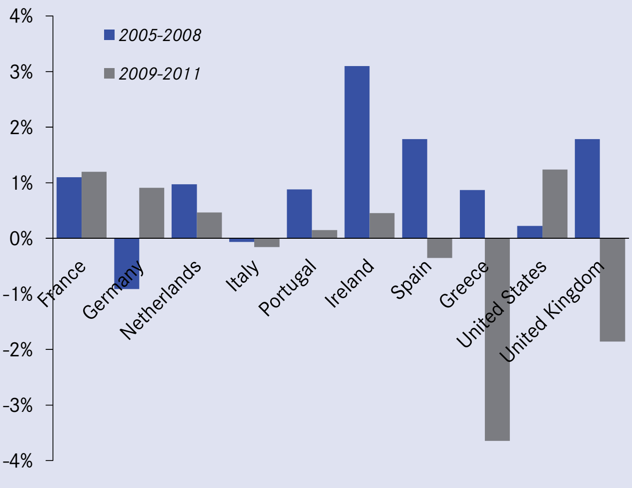
Within this group of countries, France, in 2011, exhibited one of the largest increases in real labour costs since 2005, with a cumulative increase of 7%.[7] In addition, France is characterised by a stable growth rate for average labour costs before and after 2008, a little over 1% per year in real terms. During the same period, according to OECD statistics, France, like Germany, the United Kingdom and Italy, and unlike Spain, recorded no growth in hourly labour productivity. But the real labour costs changed slightly in Italy, and dropped nearly 2% per year in the UK. In Germany, real labour costs are recovering, in the face of a period of sharp decline before the crisis. And in Spain, a decline in real labour costs appeared following the onset of the crisis, while hourly productivity rose.

[5] Available data does not allow a comprehensive analysis of remuneration trends in the public sector over the entire period.

[6] Available international data concerns labour costs, a concept that is similar, but not equivalent to the super-gross wage shown in Figure 3 for France (see definitions in Box 1).

[7] It is exceeded only by Ireland, with an increase of over 10% during the period, mainly before the crisis.

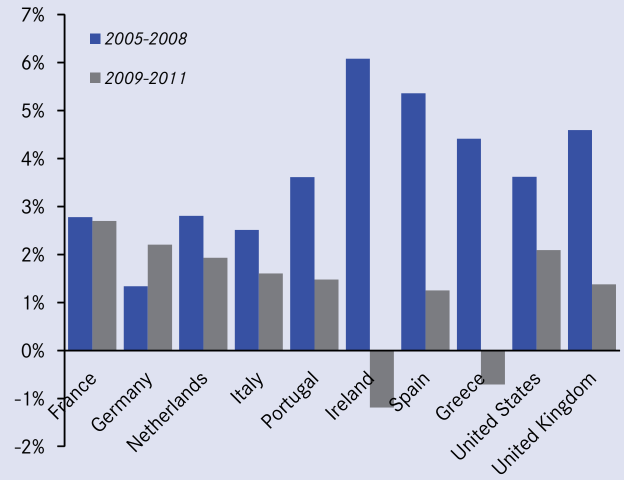
6. Annualised growth of real hourly labour costs in OECD countries



Interpretation: For Ireland, the post-crisis period corresponds to 2009-2010. The INSEE deflator is used for France; the OECD deflator is used for other countries.

Source: OECD STAN database.

7. Annualised growth of nominal hourly labour costs in OECD countries



Interpretation: For Ireland, the post-crisis period corresponds to 2009-2010.

Source: OECD STAN database.

This French singularity is even clearer in Figure 7, which compares trends in *nominal hourly labour costs* within the same group of countries. In all countries except Germany and France, increases in that cost slowed significantly due to the crisis; the cost even dropped in Greece and Ireland. Germany differs but the wage increases make up for the pre-crisis period wage stagnation. In France, increases in the nominal hourly rate have barely slowed. In the UK, the slowdown in nominal labour costs contrasts with the dynamism of prices (consumer price inflation averaging 3.3% per year during 2009-2011), which explains the sharp decline in the real cost of labour shown in Figure 6.

Observation 6: Low inflation combined with increase in the nominal labour costs induce a significant increase in real labour costs in France following the onset of the crisis, more so than in neighbouring countries outside the eurozone (lower inflation) and in the eurozone (higher nominal growth).

Wage determinants

To understand the relative disconnection between wages and economic trends, particularly that of unemployment, we must study factors that determine wages.

Traditional economic theory shows that wages and employment rates are the result of equilibrium between labour supply, provided by workers, and the demand for labour, which comes from firms. From this point of view, the crisis reduces the demand for labour and consequently leads to a slowdown or even a decline in real wages. The adjustment may not be immediate. A recession is thus accompanied by a temporary increase in unemployment, which then leads to a reduction in wages.

Nevertheless, in practice, the adjustment of real wages is limited by indexing phenomena and, when there is zero inflation, by the virtual impossibility of a nominal decrease in remuneration. It is also limited by the optimization strategy of firms. These phenomena are not unique to France.

Wage determinants as seen by business leaders

Besides the legal framework of the employment contract (Box 2), a fundamental concept for understanding wage determinants is the incentive role of remuneration. The efficiency wage theory emphasises that the unobservable effort made by an employee depends on his remuneration;[8] a firm seeking to maximise its profits might therefore be willing to pay wages in excess of the minimum the employee would accept to do his job, in order to increase his effort. Monetary recognition is indeed a factor affecting work, and therefore productivity, as many studies have shown.[9]

The idea that firms can choose not to reduce wages in times of crisis is supported by a series of studies that interviewed

[8] See Solow R.M. (1979): «Another Possible Source of Wage Stickiness», *Journal of Macroeconomics*, vol. 1, no. 1, pp. 79-82.

[9] For example, many studies show that higher wages result in less absenteeism or fewer resignations. See Allen S.G. (1981): «An Empirical Model of Work Attendance», *Review of Economics and Statistics*, vol. 63, no. 1, pp. 77-87.

2. Can an employer lower wages?

An employer can utilise some variable parameters such as certain bonuses or overtime pay in order to adjust wages. The employer may also make use of short-time working arrangements. However, in France, as in most European countries, including the United Kingdom, the employer may not reduce the wage elements of an employee's contract without his approval. If the employee refuses, he may be laid off. In France, the employer must justify an economic motive for this action.

The transposition of the national inter-professional agreement (ANI, *Accord national interprofessionnel*) of 11 January 2013 provides the possibility of temporary wage reductions within a framework of agreements for job retention. A refusal may result in termination of the employment contract, but this termination will be considered as a redundancy, with a real and serious cause as stated in the agreement.

In addition, a company-level agreement may revise benefits conferred by a previous agreement that are not laid down in the individual employment contract. Thus, the 2013 "Renault" agreement, which froze nominal wages and eliminated many jobs, did not follow the logic of the ANI, but raised the effective workweek to 35 hours by no longer considering certain training or break time.

Some European countries have implemented more drastic measures: in Germany, a company-level agreement may make a unilateral change to an employment contract; in Spain, a measure for unilateral wage cuts came into force in February 2013.

business leaders, primarily in the United States, the United Kingdom and Sweden.[10] Although the studies concerned varied institutional environments, they showed that moderate adjustment of nominal wages in a recession is partly due to decisions by corporate leaders.[11] One explanation they offer is that firms do not want to reduce nominal wages because of the negative effect that such a reduction would have on the morale of the employees and therefore on their productivity (Box 3).

Surveys of corporate management in France confirmed the presence of nominal wage rigidity. According to the "REPONSE 2010-2011" study,[12] if the financial situation of a firm is an overwhelmingly criterion in decisions concerning wage increases, the need to maintain a good workplace atmosphere is also cited as important by a majority of firms with more than ten employees; this proportion even increased between 2004-2005 and 2010-2011. Therefore, it is hardly surprising that among firms with more than ten employees, barely 1% had, in response to the crisis, followed a policy of reducing nominal wages over the period 2008-2010. Some employees were affected by a wage freeze in 10% of the firms, and by a wage slowdown in about 20%. Finally, a large majority of firms did not downgrade their wage policies in response to the crisis, at least as of year-end 2010. More specifically, if the proportion of firms making blanket wage increases in 2010-2011 is comparable to 2004-2005, a slowdown in individual increases was observed for executives as well as non-executives, no matter the size of the firm. Yet, the proportion of firms paying individual or collective bonuses has remained stable.

It is important to understand the effect of macroeconomic conditions on the wages of new hires. A series of studies[13] shows that the wages offered to recruits vary more in reaction to the conditions of the labour market than do the wages of individuals already employed. However, even if hiring wages are more sensitive to the economic cycle, their degree of flexibility remains moderate, partly because firms want to maintain wage equity with current employees (see Box 3). Studies in fifteen EU countries confirmed that, for the majority of firms, preserving their corporate wage structure is a more important factor in determining hiring wages than the situation of the labour market. However, there are significant differences among countries: in France, 32% of firms believe that the situation of the labour market determine their hiring wage, while in Ireland and Spain, the proportions were respectively 29% and 4%.[14]

Ultimately, remuneration practices follow the logic of preserving incentives or workplace atmosphere in a fashion that is relatively independent of the economic cycle, the firm's situation and the state of the labour market. This situation is not unique to France.

[10] See Howitt P. (2002): «Looking Inside the Labor Market: A Review Article. Why Wages Don't Fall During a Recession by Truman F. Bewley», *Journal of Economic Literature*, vol. 40, no. 1, pp. 125-138.

[11] The most comprehensive study is provided by T.F. Bewley (1999): *Why Wages Don't Fall During a Recession*, Harvard U. Press. Similar research was conducted by Kaufman R.T. (1984): «On Wage Stickiness in Britain's Competitive Sector», *British Journal of Industrial Relations*, vol. 22, no. 1, pp. 101-12 for the UK, Agell J. and P. Lundborg (1995): «Theories of Pay and Unemployment: Survey Evidence from Swedish Manufacturing Firms», *Scandinavian Journal of Economics*, vol. 97, no. 2, pp. 295-307, for Sweden, and Blinder A.S. and D. H. Choi (1990): «A Shred of Evidence on Theories of Wage Stickiness», *Quarterly Journal of Economics*, vol. 105, no. 4, pp. 1003-15 and Campbell C.M. and K. S. Kamlani (1997): «The Reasons for Wage Rigidity: Evidence from a Survey of Firms», *Quarterly Journal of Economics*, vol. 112, no. 3, pp. 759-89 for the USA.

[12] Study designed by DARES, surveying 4,000 business leaders from representative institutions in the private and semi-public sectors (excluding agriculture). For a study of nominal rigidities and the frequency of wage changes in France, see Le Bihan H., J. Montornès and T. Heckel (2012): «Sticky Wages: Evidence from Quarterly Microeconomic Data», *American Economic Journal: Macroeconomics*, vol. 4, no. 3, pp. 1-32.

[13] See, e.g., Solon G., R. Barsk and J.A. Parker (1994): «Measuring the Cyclicality of Real Wages: How Important Is Composition Bias?», *Quarterly Journal of Economics*, vol. 109, no. 1, pp. 1-25.

[14] See Galuscak K., M. Keeney, D. Nicolitsas, F. Smets, P. Strzelecki and M. Vodopivec (2012): «The Determination of Wages of Newly Hired Employees: Survey Evidence on Internal versus External Factors», *Labour Economics*, vol. 19, no. 5, pp. 802-812.

Observation 7: Part of wage rigidity is explained by behavioural factors as firms' aim is to preserve incentives and positive workplace atmosphere.

A high dissatisfaction with wages

Given the importance of behavioural factors in the determination of wages, we need to comprehend how employees perceive their level of remuneration and whether these perceptions were affected by the crisis.

The evolution of employment conditions such as remuneration practices are key determinants of job satisfaction. That satisfaction depends on wages, both absolute and relative, but also depends on the employee's realisation of the influence he has on his daily activities, the variety of tasks, as well as the factors that help his career development, such as access to internal training programmes.[15] It is common to find jobs with low satisfaction in terms of wages but high satisfaction in terms of the employee's accomplishments, and vice versa. This phenomenon suggests that employees are sometimes willing to accept lower wages in exchange for other forms of compensation. For example, the German wage slowdown in the 2000s was preceded by a sharp reduction in workplace accidents.[16]

In France, the last decade seems to have left in its wake a very high level of employee dissatisfaction with wages, as shown by Table 2. In contrast, Germany, which has shown remarkable wage moderation in recent years, stands out with a sharp rise in wage dissatisfaction, which had formerly been very low. According to the European Survey on Working Conditions, the number of non-permanent employees in Germany dissatisfied with their remuneration in view of their work doubled from 2005 to 2010. For these employees, the level of dissatisfaction is now similar to that in France. At the same time, the already high level of dissatisfaction in France is probably an obstacle to the implementation of a wage moderation policy.

Observation 8: In the absence of an improvement in working conditions, the already high level of dissatisfaction in France is probably an obstacle to the implementation of a wage moderation policy.

3. Nominal rigidities and wage comparisons: the contribution of behavioural economics

The phenomenon of nominal wage rigidity has been studied in detail by so-called "behavioural" economics. The main hypothesis is that employees perceive a reduction in nominal wages as a hostile act and/or an unjust decision, and that these perceptions will have a negative effect on their attitude, and consequentially on the performance of the company. In a scenario of reduced demand, a blanket wage reduction lowers the morale of all employees, whereas dismissals only affect the morale of those who lost their jobs. As the latter are no longer present in the company, they have no effect on its performance. Therefore, managers generally prefer to downsize than to impose a blanket reduction in nominal wages.

Why are employees more preoccupied with their nominal wages than their real wages, the figure that actually determines their standard of living? The first explanation is that a decline in nominal wages has an abrupt character, while the reduction in real wages due to inflation is only felt over a long period as the prices of various consumer products rise. A second explanation concerns the responsibility of the head of the corporation: he is not considered responsible for the price increases, but it would be his decision to reduce nominal wages. Theories of reciprocity then suggest that the employee will lose his motivation if nominal wages are reduced, but not in the case of lower real wages caused by inflation.

If employee productivity is affected by a reduction in their nominal wages, an employer might consider dismissing part of its staff and "substituting" new recruits, with lower remuneration than the former employees. However, corporations do not seem to favour such a strategy. The most likely reason is that it involves changes in the company's wage structure, which in turn affect employee morale, and thus productivity. The concern therefore prevails to have a "fair" wage structure within the company: according to the SALSA study[a], nearly 60% of French private sector employees would consider it unfair if their colleagues received less remuneration than they do. The importance of relative remuneration is also a factor in public debate concerning the remuneration of "captains of industry" and a central element in the determination of wages for new hires.

[a] Study designed by Ch. Baudelot, D. Cartron, J. Gautié, M. Gollac, O. Godechot and C. Senik, funded by ANR and CEPREMAP.

[15] A large literature on the subject exists in economics, as well as in sociology and psychology. See, for example, Kelleberg A. (1977): «Work Values and Job Rewards: A Theory of Job Satisfaction», *American Sociological Review*, no. 42, pp. 124-143, Clark A.E. (1997): «Job Satisfaction and Gender: Why Are Women so Happy at Work», *Labour Economics*, no. 4, pp. 341-372 and Gazioglu S. and A. Tansel (2006): «Job Satisfaction in Britain: Individual and Job Related Factors», *Applied Economics*, no. 38, pp. 1163-1171.

[16] According to Eurostat, the standardised rate of workplace accidents in 2003 in Germany was 40% lower than that observed in France, while the levels were similar in 1995.

2. Proportion of employees answering "no" to the question "Am I well paid for the work I do?"
in 2005 and 2010, in % of those questioned

		2005	2010	Difference
France	● permanent contracts	41	42	ns
	● other contracts	46	49	ns
Germany	● permanent contracts	15	21	+ 6
	● other contracts	26	49	+ 24
Italy	● permanent contracts	36	34	ns
	● other contracts	39	35	ns
United Kingdom	● permanent contracts	27	28	ns
	● other contracts	33	26	– 6
Finland	● permanent contracts	45	43	ns
	● other contracts	53	39	– 14

Interpretation: ns = not significant at the 5% level.
Source: European survey on working conditions.

French firms' wage determination methods during the crisis are similar to those of other European countries

Very few studies of wage determination have been carried out on the international level. Nevertheless, recent work conducted by the Wage Dynamics Network (WDN)[17] allows us to compare the responses of firms in a small group of European countries (excluding Germany and the United Kingdom). Their study shows that in 2009, the degree of wage moderation was relatively low for this group of countries. The proportion of firms that cut wages was between 2% and 2.6% in Spain, Italy and the Netherlands. The proportion that freezed wages was greater: 15% in the Netherlands and 27% and 32% in Spain and Italy, respectively.[18]

Table 3 presents the different strategies for total wage bill reduction used by firms in 2009. This data reflects the limited use of wage cuts and the predominance of job reductions. In France, nearly half of the firms say they prefer to eliminate jobs, while only 10% prefer to reduce wages. In the Netherlands, these figures are 48% and 6% respectively; in Spain, 68% and 7%. In Portugal and Austria, firms are more likely to reduce wages, but cutting jobs is still the most common strategy.

Wage reductions, for all countries surveyed, concentrate on the variable part; base wages are very rarely affected. Moreover, the countries concerned by the WDN study seem to indicate that the variable part of wages is adjusted more severely in countries where trades unions have a strong presence during wage bargaining.[19]

Observation 9: In European economies, firms have largely favoured the adjustment of their wage bill via job reductions rather than wage cuts. Only the variable part of remuneration was used to reduce wages.

Institutional factors: industry-wide agreements and the SMIC

While the behavioural factors listed above are not specific to France, one could conclude that in France, industry-wide agreements and the prevalence of the SMIC play a special role. In fact, according to the REPONSE study cited above, one third of leaders of firms with more than ten employees reported in 2010-2011 that industry-wide agreements are of utmost importance in decisions to increase wages. In addition, according to more than half of those business leaders, the normative nature of the agreements affects employee classification systems, seniority bonuses or "thirteenth month" bonuses (see Box 4).

Concurrent with industry-wide agreements, a significant proportion (approximately 10%) of private sector employees is still paid based on the SMIC.[20] Approximately 30% of these workers actually earn more than 1.2 times the minimum wage, mainly due to the variable part of their remuneration (the SMIC is therefore just a safety net for "bad" months, with only a limited relation to total annual remuneration). In all cases, the influence of the SMIC on the aggregate nominal wage is, since 2006, combined, on average, with that of inflation: as indicated above in Table 1, the purchasing power of gross hourly SMIC changed very little between year-end 2006 and year-end 2010, and this trend has continued since that time.[21]

[17] Harmonised study conducted between the third quarters of 2008 and 2009 by a network of seventeen central banks (Austria, Belgium, Czech Republic, Estonia, France, Greece, Germany, Hungary, Italy, Ireland, Lithuania, the Netherlands, Luxembourg, Poland, Portugal, Slovenia and Spain). However, the results for Germany are not usable. See European Central Bank (2009): *Wage Dynamics in Europe*, Final Report of the Wage Dynamics Network (WDN), and Wasmer E. (2012): «An Introduction to the Special Feature Section: Price Wage and Employment Adjustments in 2007-08 and some Inference for the Current European Crisis», *Labour Economics*, no. 19, pp 769-771, and other articles appearing in the same volume.

[18] See Rõõm T. and J. Messina (2009): *Downward Wage Rigidity During the Current Economic Crisis*, Mimeo WDN.

[19] See also Babecký J., P. Du Caju, T. Kosma, M. Lawless, J. Messina and T. Rõõm (2012): «How Do European Firms Adjust their Labour Costs when Nominal Wages are Rigid?», *Labour Economics*, vol 19, no. 5, pp. 792-801.

[20] DARES, *Enquête Activité et condition de la main d'œuvre*.

[21] The "boost" of July 2012 was in expectation of the increase planned for January 2013.

3. Strategies to reduce business costs, 2009
In % of businesses surveyed

	Reduction in wages...			Reduction in jobs...			Hours	Other
	base	variable	Total	permanent	temporary	Total	of work	costs
France	0.1	9.9	10.0	17.1	33.9	51.0	12.4	26.2
Netherlands	1.2	4.6	5.8	8.4	40.1	48.5	5.8	39.9
Austria	0.4	15.8	16.2	11.2	10.1	31.3	34.2	28.2
Italy	1.3	8.8	10.1	17.1	20.8	37.9	18.2	33.8
Spain	1.1	5.9	7.0	25.8	42.4	68.2	5.7	19.2
Portugal	2.2	17.0	19.2	15.3	10.0	25.3	6.4	47.0

Source : European Central Bank (2009): *Wage Dynamics in Europe*, Final Report of the Wage Dynamics Network (WDN), Table 5.4.

Recent work by DARES[22] breaks down the short-term effect (after two quarters) of revaluations of industry-wide wage minima (excluding alignment with the SMIC), the real SMIC and the consumer price index over the period 2003-2009.[23] In the short term, a 1% increase in the SMIC would raise the monthly base wage by only 0.02%. Increasing industry-wide minima would have a much greater impact: close to 0.1% for a 1% increase, although this is half the rate of inflation.

Ultimately, industry-wide agreements have contributed to maintaining wage dynamics since the beginning of the crisis. Since 2010, circumstances have led to a weakening of this contribution. Thus, according to annual reports on collective bargaining, despite widespread support (especially in 2011, marked by two increases in the SMIC to account for inflation), revaluations under industry-wide agreements were only on the order of 1.6% in 2010 and 2% in 2011, below the rate of inflation. However, in a context of very low inflation and a strong increase in unemployment, industry-wide agreements continue to impede downward adjustments of real wages.

Observation 10: The broad coverage of industry-wide agreements limits the ability of firms to adjust wages. In particular, industry-wide agreements continue to impede downward adjustments of real wages.

4. Industry-wide agreements

About 90% of private sector employees in France are covered by industry-wide agreements. The principles governing their negotiation were established by the “Auroux” laws in 1981[a]. About 700 industry sectors have been identified in France, of which fewer than 300 have over 5,000 employees.

The key role of industry-wide agreements is due to their almost systematic extension by the government –at least for the most important industries– to all firms in the given industry. In terms of wages, industry-wide agreements define the professional classifications and, in general, the wage minima for each class, as well as various parameters affecting the hourly cost (e.g. breaks, days off).

The legal framework for industry-wide negotiations imposes historical trends for prices and wages in the industry as a starting point. About one third of the agreements are concluded after over a year of negotiations; usually two or three years are necessary. Thus, revisions of industry-wide minima signed in a given year tend to reflect price changes over several years, resulting in a gap between the increase in the minima and the current trends in prices.

Corporate agreements cannot override the industry-wide classifications and minima. The ANI of 11 January 2013 reaffirms this hierarchy of standards, even in the case of agreements for job retention. A “favourability principle” exists in many countries, including Germany, but in Germany and Spain, the majority of industry-wide agreements provide for exit clauses based on a company-level agreement.[b]

[a] See Cette G. and J. Barthélemy (2010): *Refondation du droit social : concilier protection des travailleurs et efficacité économique*, Rapport du CAE, no. 88, la Documentation française, for a detailed presentation of the development of contract law.

[b] Keune M. (2011): *Clauses dérogatoires sur les salaires dans les conventions collectives sectorielles dans sept pays de l’UE*, Rapport de l’Eurofound, no. EF1087, cf. www.eurofound.europa.eu/publications/htmlfiles/ef1087_fr.htm

[22] André C. (2012): «L’impact des relèvements salariaux de branche sur l’évolution du salaire mensuel brut de base entre 2003 et 2009», *DARES Analyses*, no. 011, February. Studies of firms with more than ten employees, which represents about 90% of total employment.

[23] Over the period 1994-2005, when the standard French workweek became 35 hours, see Avouyi-Dovi S., D. Fougère and E. Gautier (2010): «Les négociations salariales en France : une analyse à partir de données d’entreprise (1994-2005)», *Économie et Statistique*, no. 426, pp. 29-65.

How can wage determination be addressed?

The ongoing gap between sluggish productivity trends and unabated increases in real wages since the beginning of the crisis threatens to further degrade the employment situation in France. Policies favouring increased labour productivity are the only way to ensure higher standards of living in France over the long term without undermining the cost-competitiveness of businesses. In the short term, in the absence of productivity gains, if wages are mainly determined by the employer, the government and trades unions can seek to remove obstacles to a wage slowdown, with the objective of limiting increases in unemployment. At a given inflation rate, the nominal wage is the appropriate target for adjustment. In view of the previous sections of this *Note*, we can identify three levers to adjust nominal wages: wage minima, employee dissatisfaction and the funding of social protection.

Wage minima

Remuneration is influenced by two types of minima: the SMIC and industry-wide minima.

As we have seen above (Figure 2 and Table 1), the *absence of a "boost" in the SMIC* has resulted, since the onset of the crisis, in a wage slowdown, but only for the lowest-paid employees. Conversely, a resumption of "boosts" in the SMIC would likely have a significant effect on the lowest level of wages.[24] However, the SMIC affects only the bottom of the curve. As we have seen, rigidities exist at all wage levels.

Industry-wide collective agreements influence recent wage dynamics above the minimum wage. The Ministry of Social Affairs and Employment could be more selective when extending industry-wide agreements, especially those whose provisions could be a serious obstacle for the development of certain parties, or those which have the de facto effect of favouring some firms in the industry. At the same time, social partners and the government might seek to include derogation clauses in the extended agreements concerning industry-wide minima, as well as other instruments affecting effective hourly remuneration. These derogations would concern firms in difficulty, subject, for example, to a company-level agreement. Given the numerous unemployed workers willing to accept lower wages, derogations could be extended, in some industries, to newly-created firms during their first years of activity.

Job dissatisfaction

A second hindrance in the adjustment of wages is the fact that wage dissatisfaction is already very strong in France. This underscores the importance of *promoting job satisfaction* for aspects other than wages. One approach could be to target non-wage factors that affect job dissatisfaction. Thus, joint negotiations and government studies are too compartmentalised. Negotiations concerning quality in the workplace –inter-professional, industry-wide or firm-specific– should be more closely linked with those on wages and employment, and vice versa. We have seen that the same level of job satisfaction can be achieved with different combinations of remuneration and non-monetary factors. If real prospects for improving working conditions are identified, this could make wage moderation more acceptable. Allowing employees to engage in a wider variety of tasks is a well-known approach for organisations to boost job satisfaction.[25] More generally, academic literature shows that, in a context of highly demanding jobs, lack of autonomy at work (i.e. the employee cannot be an actor in his work, in his participation in the production of wealth and in the conduct of his professional life) is a major psychosocial risk factor for businesses.[26] Trades unions can already enhance the relationship between private and professional life, at no cost to the business, in particular by increasing the employee's flexibility concerning the organisation of his day and/or week. Improving working conditions and businesses' ability to respond to "risky" situations also implies directing a portion of the funding of professional training towards training for supervisors concerning issues of health and safety at the workplace. Finally, the social acceptability of sacrifices concerning wages can be enhanced by a system of executive remuneration based on corporate and social measures, inspired by German and Swiss initiatives in this regard.

Funding for social protection

A third hindrance is the *large gap in France between super-gross wages and net wages* (excluding those earning the SMIC), which gives the employer and the employee different perceptions of the same remuneration level. Returning to a tax-based system of funding for social protection, and in particular its non-contributory elements, would allow reduction of this gap in the longer term (even if the difference between total labour costs and purchasing power would not necessarily be reduced) due to the transfer of social contributions to other taxes. Shifting social contributions to the CSG (*Contribution sociale généralisée*, General social contribution)

[24] We note that, since wages affected by instruments that reduce social contributions and the CICE are defined in terms of the SMIC (1.6 and 2.5 times the SMIC, respectively), a decrease in the minimum wage would limit labour costs for very low wage levels but would also engender an automatic increase in costs for certain jobs. This would entail a significant adaptation of these instruments, and of social protection funding as well.

[25] See Hackman J.R. and G.R. Oldham (1976): «Motivation through the Design of Work: Test of a Theory», *Organizational Behavior and Human Performance*, no. 16, pp. 250-279 and Kalleberg A.L. (1977): «Work Values and Job Rewards: Theory of Job Satisfaction», *American Sociological Review*, no. 42, pp. 124-143.

[26] See work by the Collège d'expertise sur le suivi statistique des risques psychosociaux au travail [Expert panel on monitoring psychosocial risks at work] http://www.college-risquespsychosociaux-travail.fr/index.cfm

and shifting targeted derogations to lower wage levels, or even the CICE, can be considered part of this idea, but remain formulated as exceptions or instruments that are not necessarily sustainable, and that cannot therefore change wage dynamics in a low inflation context.

The monetary illusion

As noted above, rigidity of nominal wages is a nearly universal feature of advanced economies: it is easier to slow down real wage growth via a lack of indexation of nominal wages to dynamic inflation than via a freeze or decrease in the nominal wage. In the short term, inflation allows more significant adjustments to the real wage than various factors that affect the nominal wage (wage minima, job satisfaction, taxes). The United Kingdom provides a recent illustration of this.

Low inflation is therefore an obstacle to a rapid adjustment of real wages. Since monetary policy is the responsibility of the European Central Bank, we believe that the institution should be oriented towards a *more accommodative monetary policy*, consistent with temporarily-higher inflation, as seen, for example, in the United Kingdom[27].

Conclusion

Since wage policies are the responsibility of social partners, only limited instruments are available to public authorities. That is why this *Note* focuses on regulatory policies (derogations for industry-wide agreements, organisation of negotiations between employers and employees, revising the SMIC). Outside of these instruments, a wage adjustment would be difficult to impose in France in the short-term, in a context of low inflation.

[27] Note that the spectacular wage adjustment in the wake of the French "tournant de la rigueur" (economic austerity programme) in 1983 was based on a nominal freeze coupled with inflation significantly exceeding 5%.

conseil d'analyse économique

The French Conseil d'analyse économique (Council of Economic Analysis) is an independent, non partisan advisory body reporting to the French Prime Minister. This Council is meant to shed light upon economic policy issues, especially at an early stage, before government policy is defined.

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