

WAGE FORMATION IN A LOW INFLATION ENVIRONMENT

Wage formation is driven, among other factors, by inflation expectations. Insofar as the latter have been influenced by the low inflation rates in the Spanish economy in recent years, the result will have been lower upward pressure on nominal wages. This mechanism is more important in countries, like Spain, in which the coverage of collective bargaining is greater.

In particular, the low inflation of recent years may have been a key factor in explaining the lesser degree of indexation of wages to price developments, which has been a very notable change in the wage formation process in recent years. Traditionally, the system of collective bargaining in Spain was highly linked to past

inflation through two channels. First, the wage increases under multi-year agreements were highly indexed to past inflation. Second, approximately three-quarters of collective agreements had indexation clauses providing for compensation for deviations of actual inflation from the inflation forecast at the time the agreement was signed. Recently, however, there has been a very significant reduction in the use of these clauses, which have been present in less than 20% of the collective agreements signed over the last four years (see Chart 1).

Of the various factors that may explain this steep reduction, low inflation seems to stand out, according to

Chart 1
WORKERS WITH INFLATION INDEXATION CLAUSE

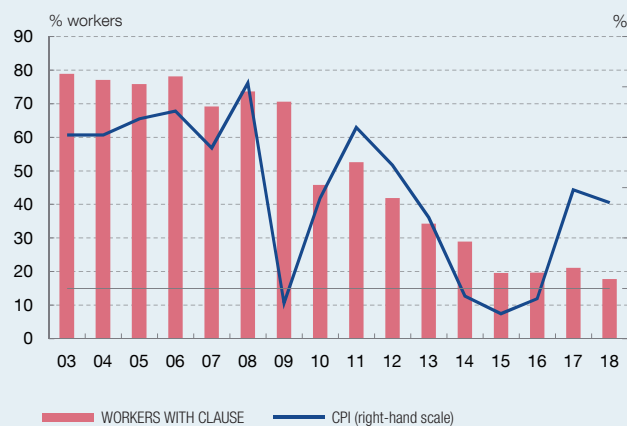


Chart 2
MODEL-BASED PHILLIPS CURVE BREAKDOWN
Deviations from period average

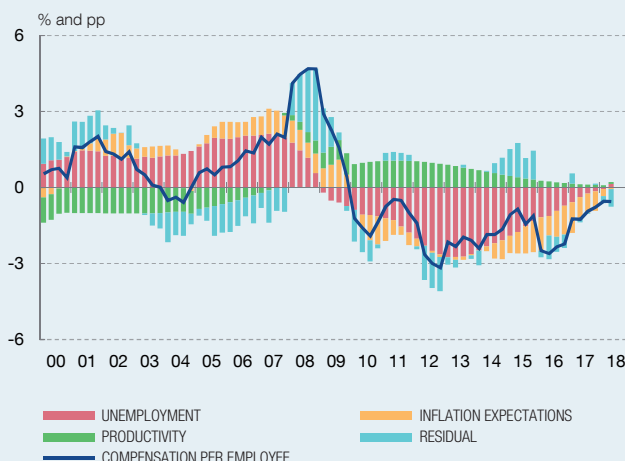


Chart 3
DISTRIBUTION OF WAGE GROWTH IN 2008
Full-time employees working two years running for the same firm

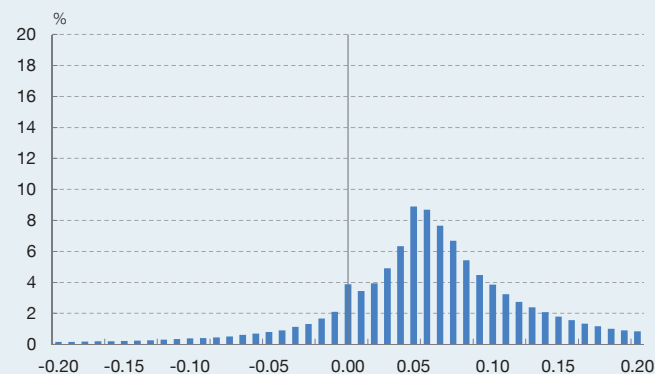
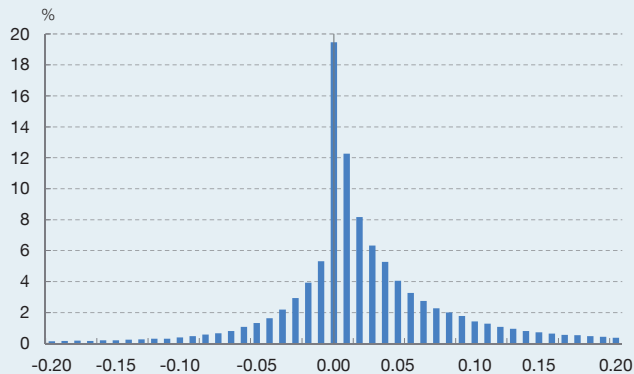


Chart 4
DISTRIBUTION OF WAGE GROWTH IN 2015
Full-time employees working two years running for the same firm



SOURCES: Ministerio de Trabajo, Migraciones y Seguridad Social, INE, Continuous Sample of Working Histories and Banco de España.

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the latest wave of the survey conducted by the Wage Dynamics Network.¹

One of the effects of low inflation rates is that they may hamper downward wage adjustment in response to adverse shocks. The empirical evidence available points to the existence of nominal rigidities that make it difficult for nominal wages to fall. In a persistently low inflation environment, this means that wages cannot be reduced in real terms. Indeed, since the start of the crisis and in the context of very low inflation, there has been a growing incidence of wage freezes. Charts 3 and 4 show that between 2008 and 2015 the proportion of workers whose wages grew at 0% increased very significantly, to 25%. This may be indicative of the presence of obstacles that have limited the possibility of negative rates of change in compensation during this period.

Chart 2 shows the factors that explain actual wage developments, according to a breakdown based on a Phillips curve model. This model relates wage growth in the economy as a whole to a number of determinants, including inflation, productivity and indicators of labour market slack. As can be seen, the high level of unemployment was the main factor restraining wage rises between 2008 and 2012. However, from 2014, low inflation played a very significant role in explaining the low growth of compensation per employee, against a background of

gradual economic recovery and declining unemployment. This factor contributed significantly (along with the high degree of slack that continues to characterise the labour market) to the fact that observed wage growth from that year onwards has been two percentage points lower than on average since the year 2000.²

In the latest period, negative residuals have begun to appear in the estimated wage equation, i.e. wages have grown somewhat less than would have been expected given the behaviour of their usual determinants. However, these residuals tend to disappear when broader measures of cyclical slack are used that take into account, in addition to the unemployed, those working part-time involuntarily and discouraged job-seekers who have withdrawn from the labour market as a result of their inability to find a job. In any event the reaction of wages to unemployment or, more generally, the cyclical conditions of the economy is low in Spain, as testified by the scant dispersion of wage growth observed across sectors of activity, which is well below that seen in employment and productivity.³

These findings on the wage determination process can be usefully supplemented by an analysis of individual worker data, since at this level, unlike at the aggregate level, possible changes in employment composition can be controlled for. In particular, research has been carried out

Table 1
ELASTICITY OF REAL WAGES WITH RESPECT TO UNEMPLOYMENT (SEVEN PHASES)

	Recession low unemployment (1)	Recession high unemployment pre-2009 (2)	Recession high unemployment 2009-2012 Q1 (3)	Recession high unemployment post-2012 Q2 (4)	Expansion high unemployment pre-2013 (5)	Expansion high unemployment post-2013 (6)	Expansion low unemployment (7)
Coefficients	0.097 (0.077)	0.053 (0.068)	-0.084* (0.046)	-0.260*** (0.038)	-0.104* (0.060)	-0.159*** (0.041)	-0.063 (0.087)

SOURCES: Labour Force Survey (INE) and Continuous Sample of Working Histories.

NOTE: *, **, *** statistically significant at 0.10, 0.05 and 0.01, respectively.

1 See M. Izquierdo and J. F. Jimeno (2015), *Employment, Wage and Price Reactions to the Crisis in Spain: Firm-level Evidence from the WDN Survey*, Occasional Paper 1503, Banco de España.

2 See P. Cuadrado and F. Tagliati (2018), "Wage moderation in Spain and in the euro area", *Economic Bulletin*, 4/2018, Banco de España.

3 See, for example, Box 5 of the "Informe trimestral de la economía española", *Boletín Económico*, December 2014, Banco de España.

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to see whether the cyclical response of real wages to unemployment has changed during the recent period of low inflation, taking into account, moreover, whether the unemployment rate is above or below average.⁴ In addition, the reaction of wages during the crisis has been distinguished for the periods before and after 2012, in order to investigate the possible effects of the labour reform of that year. Finally, the current phase of economic recovery has been compared with a similar expansionary period in the past, in which unemployment was high, but decreasing.

The main results of these exercises are shown in Table 2.1. First, the responsiveness of wages in Spain to cyclical

changes in unemployment is generally found to be low (and below that estimated for other countries with similar data). That said, it increased in the stage immediately after the 2012 labour market reform, probably reflecting the impact of the various measures approved to increase firm-level flexibility. As regards the recent period of recovery, the elasticity of wages with respect to the business cycle (-0.16) is somewhat higher than in similar cyclical phases in the past (-0.10), although the difference is not statistically significant. Thus, it may be concluded that, at least on the basis of the information available to end 2017, wage formation patterns have not changed significantly, as regards their traditionally relatively low level of cyclical sensitivity.

4 Following P. Font, M. Izquierdo and S. Puente (2015), "Real Wage Responsiveness to Unemployment in Spain: Asymmetries along the Business Cycle", *IZA Journal of European Labor Studies*, (2015) 4(13).