

## RELATIONSHIP BETWEEN GDP GROWTH AND EMPLOYMENT IN THE SPANISH ECONOMY

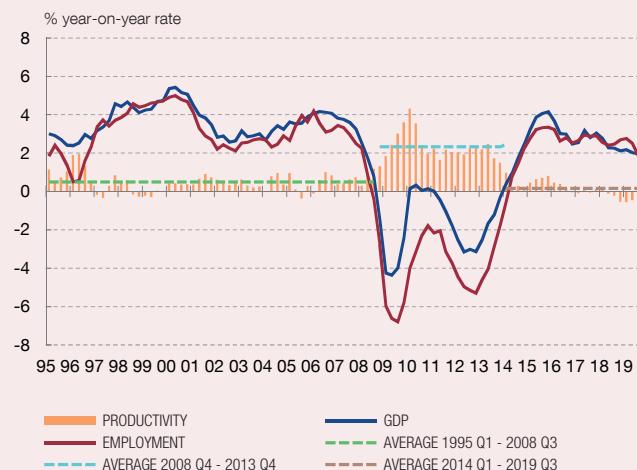
The relationship between GDP growth and that of employment in the Spanish economy is not constant over time. In particular, it varies appreciably depending on the phase of the economic cycle. As Chart 1.1 shows, during the economic upturn from 1995 to 2008, increases in the level of employment were systematically somewhat lower than those posted by GDP. This translated into very moderate growth in apparent labour productivity (0.5% per annum on average). Conversely, during the recessionary phase from 2008 to 2013, the rate of job destruction far outpaced the rate of decline of GDP, prompting marked increases in apparent productivity (2.3% per annum on average). In the current expansionary phase a very close relationship between increases in employment and those in economic activity has again been observed. That has once more given rise to very limited rises in apparent labour productivity since 2014, averaging 0.2% per annum, a figure even below that observed in the previous upturn (and with negative values in some of the more recent quarters).

This countercyclical behaviour of productivity is a differential factor of the Spanish economy, as this variable tends to be procyclical in most of the advanced economies. Thus, for instance, as Chart 1.2 shows, compared with Spain, productivity in the euro area as a whole (excluding Spain) tends to grow more in expansionary periods and to decline in recessionary episodes. That explains why the correlation between the increase in GDP and that in productivity over the 1995–2019 period as a whole is positive and high in the euro area (0.9), compared with the negative correlation observed in the Spanish economy (-0.7).<sup>1</sup>

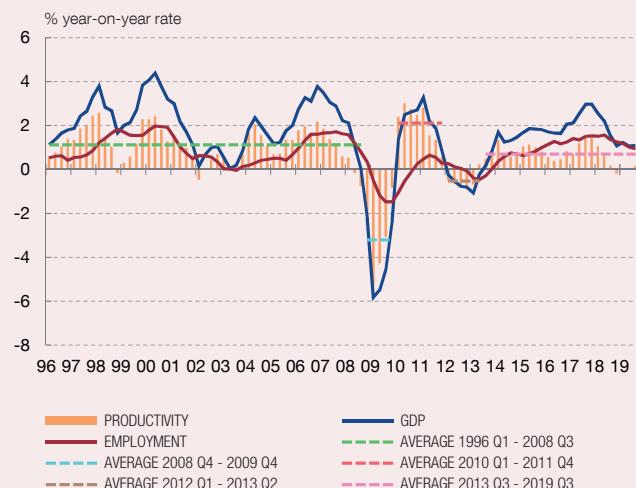
The way in which the relationship between activity and employment changes in the Spanish economy depending on the cyclical phase can also be seen in Chart 2.1, featuring all the different market economy sectors. The chart depicts two regression lines relating, respectively, to the quarters in which the year-on-year rate of market GVA (identified with blue dots) increases, and to those others in

**Chart 1**  
GDP, EMPLOYMENT AND PRODUCTIVITY

1 GDP, EMPLOYMENT AND PRODUCTIVITY GROWTH



2 GDP, EMPLOYMENT AND PRODUCTIVITY GROWTH IN THE EURO AREA, EXCLUDING SPAIN



SOURCES: QNA (INE) and Eurostat.

1 A. Urtasun, M. Izquierdo and E. Ortega (2012), in “Un análisis sectorial de la relación entre la actividad y el empleo en la economía española”, *Boletín Económico*, Banco de España, July-August, show how, although there are sector-based differences in the relationship between employment and output, asymmetrical behaviour in the different phases of the cycle is common to all sectors. Accordingly, the countercyclical pattern of productivity is not attributable to the changes in the productive structure that arise in expansions and recessions.

## RELATIONSHIP BETWEEN GDP GROWTH AND EMPLOYMENT IN THE SPANISH ECONOMY (cont'd)

which it falls (identified with red dots). The slope of each of the regression lines estimated determines how much the rate of job creation in these sectors increases (falls) for each percentage point of increase (decline) in the pace of activity. This sensitivity of employment to GVA is, both in expansionary and in recessionary periods, very close to one and is not statistically different from one type of period to another. By contrast, the constant of the estimated lines, which determines what the rate of change of employment is when the GDP growth rate is around zero, is considerably greater, in absolute terms, in recessions (-2.7) than in expansions (-0.3). This entails an evident discontinuity in the behaviour of employment when the economy moves from an expansionary phase into recession, and vice versa. In particular, when the GVA of the market sectors shifts from growing marginally to shrinking slightly, the rate of job destruction leaps sharply, by almost 2.5 pp on average. And, for more acute recessions, this is the magnitude by which the year-on-year decline in employment exceeds, on average, that of value added.

Consequently, during crises there is high job destruction irrespective of the depth of the fall-off in activity. The

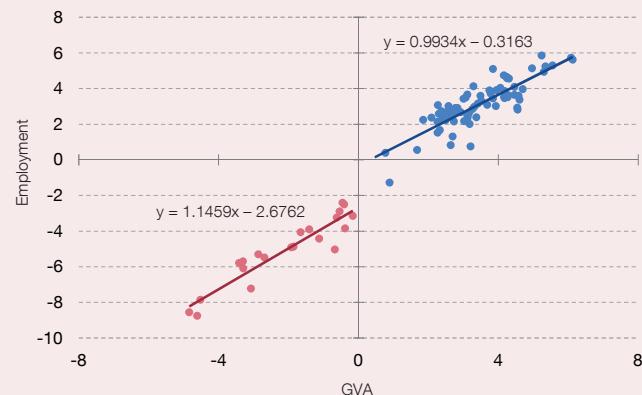
factors that might lie behind this phenomenon include the fact that many of the jobs created during expansionary periods, often under temporary contracts, have a low level of productivity associated with them. This means that, in the face of a negative shock, they cease to be economically viable from the employer's standpoint.<sup>2</sup> The historically low use of adjustment mechanisms other than employment would mean that this effect would hold until such workers began to be taken on again in the expansionary period.

Chart 2.2 illustrates how the foregoing cyclical pattern of the Spanish economy, one that is asymmetrical between expansions and recessions, is not seen in the euro area as a whole. There, employment reacts to GDP growth, approximately with the same intensity irrespective of the cyclical phase, without the relationship between employment and activity experiencing notable discontinuity as the shift from an expansion to a recession (or vice versa) occurs.<sup>3</sup>

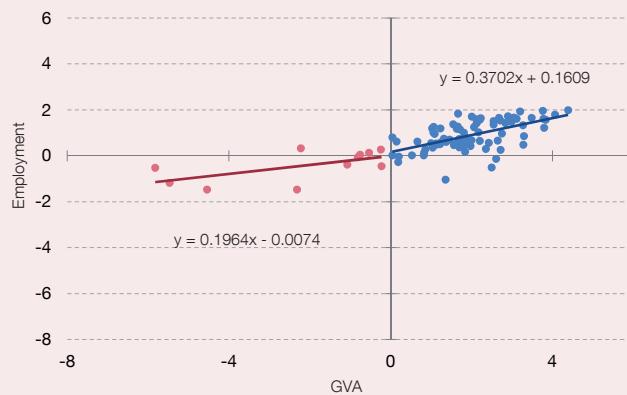
Focusing on the latest period of recovery in the Spanish economy, we might question to what extent any change in the employment-GDP relationship can be seen compared with the previous expansionary phase. In this respect,

**Chart 2**  
RELATIONSHIP BETWEEN GDP AND EMPLOYMENT GROWTH

1 RELATIONSHIP BETWEEN GDP AND EMPLOYMENT GROWTH. MARKET ECONOMY



2 RELATIONSHIP BETWEEN GDP AND EMPLOYMENT GROWTH. EURO AREA EXCLUDING SPAIN



SOURCES: QNA (INE) and Eurostat.

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- 2 In J. Costain, J. F. Jimeno and C. Thomas (2010), "Employment fluctuations in a dual labor market", Documento de Trabajo 1013, Banco de España, the authors show the significance of this mechanism for explaining the fluctuations in employment in the Spanish economy.
  - 3 Indeed, less job destruction is observed in recessions, which probably reflects the use of alternative labour-cost-adjustment mechanisms, such as hours worked, at times of a decline in activity.

### RELATIONSHIP BETWEEN GDP GROWTH AND EMPLOYMENT IN THE SPANISH ECONOMY (cont'd)

Chart 3.1 suggests that, given specific GDP growth, the growth rate of employment has been slightly higher in the 2014-2019 period (the observations of which are depicted with red dots) compared with the 1995-2008 period (blue dots). That is to say, if in the current expansionary phase the same employment-GDP relationship as was observed during the 1995-2008 period had been maintained, employment growth would have been somewhat lower than has actually been the case.

We obtain the same result when estimating a model with time-varying parameters. In particular, on the basis of these estimates, Chart 3.2 shows how the GDP growth threshold above which employment is created would have fallen slightly in the most recent period, to stand at slightly below 1%.<sup>4</sup> However, it would be necessary to await a full cyclical phase to be able to ensure these values differ.

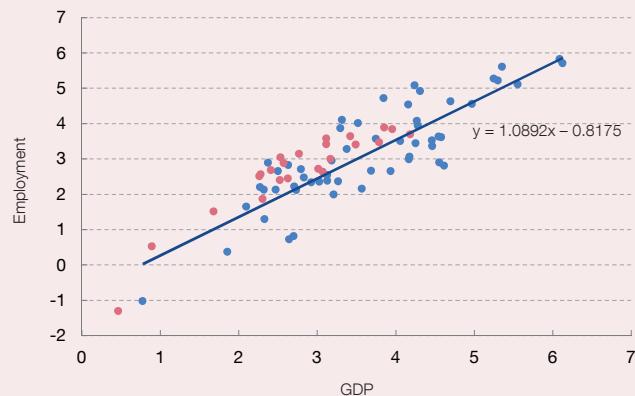
The fact that employment is performing in a comparatively more dynamic fashion in the current expansionary phase might be due to very different factors. These might include the differences between the two expansionary phases analysed, in terms of intensity, duration and composition of growth, along with the possible effects arising from

acute job destruction during the crisis (e.g. in terms of the loss of skills – and the associated reduction in productivity – of those workers who remained unemployed for a long time).

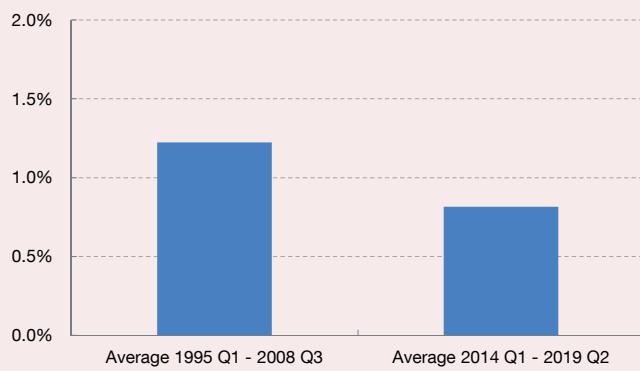
One additional factor might be the legislative changes to the labour market during the opening years of this decade. In connection with this, the fact that there has been no new recessionary period since the introduction of the latest labour-related legislative measures means it would be premature to assess the extent to which such measures might have altered the employment-GDP relationship in the Spanish economy. In this respect, the labour legislation approved early this decade developed mechanisms aimed at having the labour market adjustment in the downturn in the cycle fall to a greater extent than to date on variables other than employment. That should contribute to lessening job losses at the time at which the economy were to go into recession, in a similar fashion to what is usually seen in other economies. This is not, however, the baseline scenario currently envisaged for the coming years. Over that period, a prolongation of the expansionary phase is foreseen, with growth rates for employment not differing greatly from those for output.<sup>5</sup>

**Chart 3**  
RELATIONSHIP BETWEEN GDP AND EMPLOYMENT GROWTH

1 RELATIONSHIP BETWEEN GDP AND EMPLOYMENT GROWTH IN EXPANSIONARY PERIODS OF THE SPANISH ECONOMY. MARKET ECONOMY



2 ESTIMATED GVA GROWTH THRESHOLD ABOVE WHICH EMPLOYMENT IS CREATED. MARKET ECONOMY



SOURCE: QNA (INE).

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- 4 When the following model, namely  $\Delta\text{Empleo} = \alpha + \beta\Delta\text{PIB} + \varepsilon$ , is estimated, the GDP growth threshold above which employment is created ( $\text{PIB}^*$ ) is determined by  $\text{PIB}^* = -\alpha/\beta$ .
  - 5 See the Macroeconomic projections for the Spanish economy (2019-2022): the Banco de España's contribution to the Eurosystem's December 2019 joint forecasting exercise.