

THE CYCLICAL RESILIENCE AND DETERMINANTS OF THE PARTICIPATION RATE IN SPAIN

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Introduction

One of the striking features of the Spanish labour market during the last economic crisis was the stability of the labour force, which held steady at around 23 million persons from 2008. This phenomenon is especially remarkable given that it occurred against a backdrop of sharply rising unemployment and a decline in the working-age population, stemming from the fall in the foreign population (see Chart 1). It also contrasts with what has happened in the Spanish economy in the past, when the response by the participation rate to a decline in economic activity has usually been stronger.

This cyclical resilience of the labour force is important for a number of reasons: it may serve to support the economy's growth potential; encourage wage adjustment in an adverse macroeconomic setting; and, insofar as it is concentrated among older workers, contribute to mitigating the negative impact of population ageing on economic growth and on the sustainability of the pension system.

This article analyses the recent behaviour of the labour force in the Spanish economy.¹ The cyclical pattern of the participation rate is examined in the second section, on the basis of the latest information available. The role of different determinants of the supply of labour in Spain is discussed in the third section and, finally, the conclusions are set out in the fourth section.

Cyclical behaviour of the participation rate

The stability of the labour supply in Spain, during the last economic crisis, which, as noted above, contrasts with the greater sensitivity to the cycle in previous crisis periods, is explained by the positive developments in the aggregate participation rate.² In particular, the participation rate grew constantly until 2012, and subsequently stabilised, despite the strong rise in unemployment in the Spanish economy, which was much sharper than in previous recessions (see left-hand panel of Chart 2).

The dynamics of the sensitivity to the cycle of the participation rate may be analysed empirically by estimating a recursive regression between the change in the participation rate and the change in the unemployment rate. In such regressions, the constant term captures the medium-term trend in participation, associated (at least in part) with so-called "cohort effects",³ related, among other factors, to the educational improvement that the Spanish population has experienced in recent decades, the incorporation of women into the labour market and the inflow of immigrants during the boom years, a group with higher participation rates.

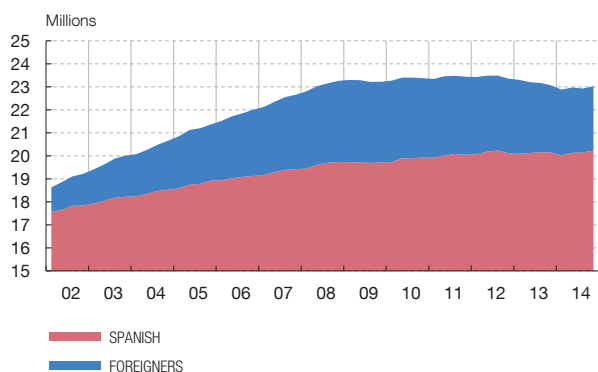
The cyclical sensitivity of the participation rate may be explained by the so-called "discouraged worker effect", whereby, when the rate and average duration of unemployment

1 This article summarises some of the main results of the forthcoming Occasional Paper entitled "*La tasa de actividad en España: resistencia cíclica, determinantes y perspectivas futuras*", by José Manuel Montero and Ana V. Regil. This paper is partly an update of the one by Montero (2011). It incorporates new EPA data, published in 2014, compiled on the basis of the population framework of the 2011 census (the previous ones were based on the 2001 Census) and also includes some methodological differences relating, inter alia, to the calibration of population weights and to the classification by educational attainment.

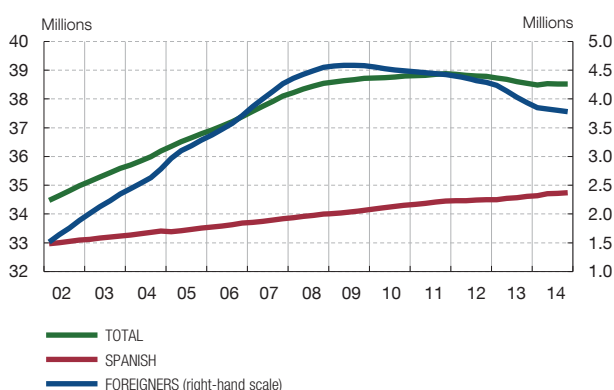
2 As analysed in Duval *et al.* (2010), for example, this phenomenon also characterised a large number of other developed countries.

3 See Cuadrado *et al.* (2007) for a detailed analysis of such effects.

LABOUR FORCE



POPULATION OF WORKING AGE (16 AND OVER)



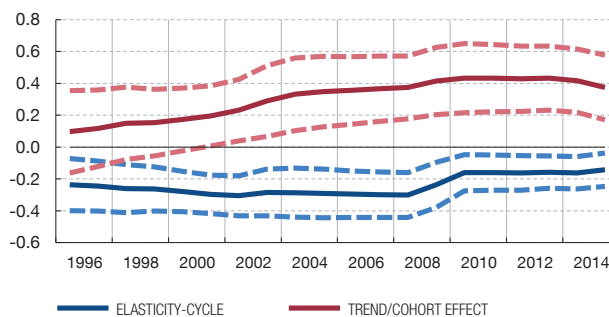
SOURCE: INE.

CYCLICALITY OF THE PARTICIPATION RATE IN SPAIN

PARTICIPATION RATE AND UNEMPLOYMENT RATE (a)



RECURSIVE PARAMETERS OF THE REGRESSION OF THE PARTICIPATION RATE ON THE UNEMPLOYMENT RATE AND A CONSTANT



SOURCES: INE and Banco de España.

a Series constructed in the Directorate General Economics, Statistics and Research of the Banco de España. Calculated as a proportion of the population over the age of 16.

increase, the unemployed may cease to actively seek employment, withdrawing from the labour force. The literature emphasises,⁴ however, that this effect may be offset by another of the opposite sign relating to the “additional worker” phenomenon, whereby, when the unemployment rate rises, additional members of the household attempt to participate in the labour market in order to maintain household income.⁵

The results of this simple estimation exercise are presented in the right-hand panel of Chart 2. First, it can be seen that the participation rate is procyclical, increasing when employment declines (the elasticity between these two variables is negative), and held relatively steady, at around -0.3 percentage points (pp), from the mid-1990s until 2007. Thereafter, its value declined (in absolute terms) by half, confirming the notable resilience displayed by participation during the last recession in the face of labour market deterioration. Second, the constant term in the regression is positive and increasing until 2010, whereafter it stabilised, holding close to 0.4 pp until 2014. This stabilisation may be

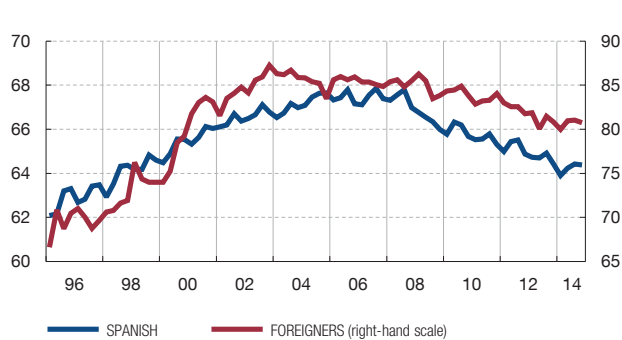
4 See, for example, Montero (2011).

5 The importance of this effect will be studied in the following section.

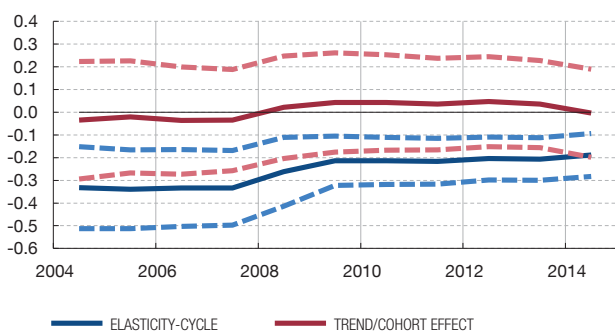
MALE PARTICIPATION RATE AND BREAKDOWN BY NATIONALITY (a)



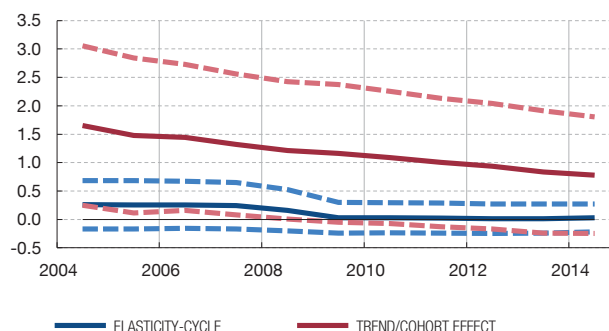
MALE PARTICIPATION RATE BY NATIONALITY (a)



RECURSIVE PARAMETERS OF THE REGRESSION BETWEEN THE PARTICIPATION RATE AND THE UNEMPLOYMENT RATE AND A CONSTANT Spanish males



RECURSIVE PARAMETERS OF THE REGRESSION BETWEEN THE PARTICIPATION RATE AND THE UNEMPLOYMENT RATE AND A CONSTANT Foreign males



SOURCES: INE and Banco de España.

a Series constructed in the Directorate General Economics, Statistics and Research of the Banco de España. Calculated as a proportion of the population over the age of 16.

explained, at least in part, by the sharp decline in immigrant inflows from 2008, and by a certain tailing-off of the cohort effects mentioned above [see Cuadrado *et al.* (2007)].

On the other hand, if this empirical exercise is carried out for a breakdown of the participation rate by sex and nationality, certain differences are identified in the patterns of response to the cycle of the various groups. In descriptive terms (see Chart 3), the male participation rate grew strongly between 1996 and 2008, and then declined from 2009 until 2014, by around 3 pp. This behaviour was observed for both Spanish and foreign males, although both the growth in the initial period and the subsequent decline were rather more marked in the case of the latter. The regression analysis (see the lower panels of Chart 3) shows that the participation rate of Spanish males is procyclical and also that this response declined during the last crisis, in line with the behaviour of the aggregate participation rate. In addition, for this group the constant term is not significant, which is consistent with the fact that a large part of the “cohort effects” mentioned are concentrated among women and the immigrant population. As for foreign males, until the start of the crisis the effect that dominates the behaviour of the participation rate is the constant, reflecting changes in the composition of immigrants by country of origin. Moreover, the cyclical response of the participation rate of this group is not significant.⁶

⁶ This would be consistent with the assumption that this population group has emigrated precisely in order to find work and that, therefore, its decision to participate in the labour market is less closely related to the cyclical situation of the labour market.

The behaviour of the female labour supply is dominated by a strong upward trend, which is seen from the beginning of the 1980s in the case of Spanish women, and which only seems to have slowed from 2011, remaining relatively stable over the last three years. This trend would be explained, in the case of Spanish women, by the gradual incorporation of younger cohorts, with a higher average participation rate, into the labour market. This greater propensity to participate may stem from factors relating to a higher level of education, reproduction-related decisions and the greater opportunities for reconciling working and family life, as a result of legislative changes and an increase in the supply of care services for children and the elderly. The response of the participation rate to the cycle appears to be nil for both Spanish and foreign women (see Chart 4).

By age group, the participation rate displays significant heterogeneity in the most recent period. The participation rate of the youngest group (aged 16-24) shows the greatest cyclical sensitivity, as evidenced by fact that in the last recession it fell by 10-15 pp from its peak, against the background of a sharp increase in the unemployment rate, of 30-40 pp (see upper left-hand panel of Chart 5). For groups between the ages of 25 and 54, the participation rate continued to follow the upward path that was seen from the end of the 1990s until the initial years of the crisis, with a slowing of its rate of growth in recent years, and, in the case of the 25-29 year olds, a flattening out. For these age groups, the cyclical component does not appear to be relevant, and no change is perceived in this pattern as a result of the recession. By contrast, for the oldest groups (aged 55-64), the behaviour observed was different from that seen in the crisis in the early 1990s, when an increase in the unemployment rate coincided with a significant decline in labour participation. In the subsequent expansionary period, the participation rate of this group began to climb, a trend that was not interrupted by the arrival of the crisis in 2008. This resilience of the participation rate of the oldest population groups over the latest downturn is a phenomenon that has been observed across developed countries [Duval *et al.* (2010)]. Underlying this may be legislative changes approved in recent years that tend to tighten the eligibility criteria for pre-retirement and early retirement.⁷ Also, the losses of financial and non-financial wealth caused by the crisis may have affected these groups, who are closer to retirement, to a greater extent, increasing the incentives for them to remain in the labour market.

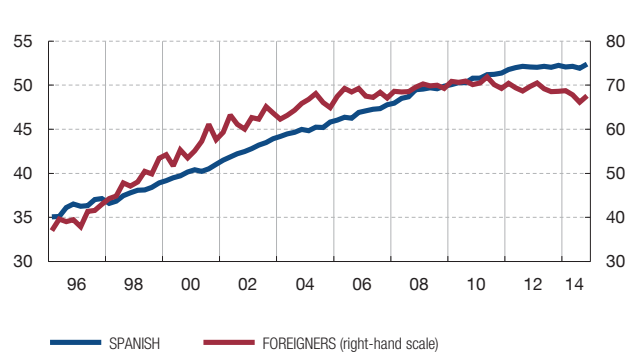
Finally, it is worth examining the evolution of participation according to educational attainment, given that this factor is usually very relevant to explain the propensity to participate in the labour market (see the lower panels of Chart 5). The group with the lowest educational attainment not only has the lowest participation rate, but this rate has also displayed a downward trend in recent decades. By contrast, the participation rate has continued to rise for the other two groups considered. Focusing on the latest recessionary period, the cyclical response has been more marked among the population with a low or medium level of educational attainment. Specifically, in the case of the first group, the participation rate began to fall again following several years of little change (coinciding with the period of economic expansion), although the reduction has been relatively modest (some 4 pp) in comparison with the increase in the unemployment rate (of 30 pp from its low in mid-2006). The participation rate of the group with a medium level of educational attainment peaked in 2009 Q2 (72.6%) and declined gradually thereafter, by 4 pp, as against an increase of some 20 pp in the unemployment rate. By contrast, the participation

⁷ Pre-retirement, understood as the workforce adjustments of companies undergoing restructuring, combining unemployment insurance benefits with those of early retirement, was used on a large scale in the 1990s' recession, both in Spain and in other developed economies, to foster business adjustment. Early retirement, by contrast, refers to the possibility offered by the pension system of retirement before the legal age of retirement. A number of minimum requirements must be met and normally there is some reduction in the pension received.

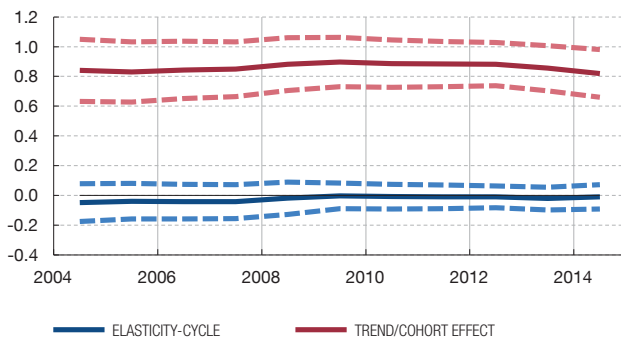
FEMALE PARTICIPATION RATE AND UNEMPLOYMENT RATE (a)



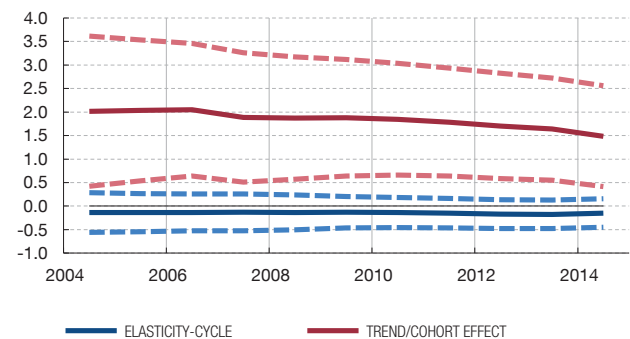
FEMALE PARTICIPATION RATE BY NATIONALITY (a)



RECURSIVE PARAMETERS OF THE REGRESSION BETWEEN THE PARTICIPATION RATE AND THE UNEMPLOYMENT RATE AND A CONSTANT Spanish women



RECURSIVE PARAMETERS OF THE REGRESSION BETWEEN THE PARTICIPATION RATE AND THE UNEMPLOYMENT RATE AND A CONSTANT Foreign women



SOURCES: INE and Banco de España.

a Series constructed in the Directorate General Economics, Statistics and Research of the Banco de España. Calculated as a proportion of the population over the age of 16.

of the group with the highest educational attainment has displayed great resilience in the face of the deterioration in the labour market, peaking in 2012, and falling thereafter by 1.9 pp, although the rise in the unemployment of this group was also significantly smaller (some 7 pp from its low).

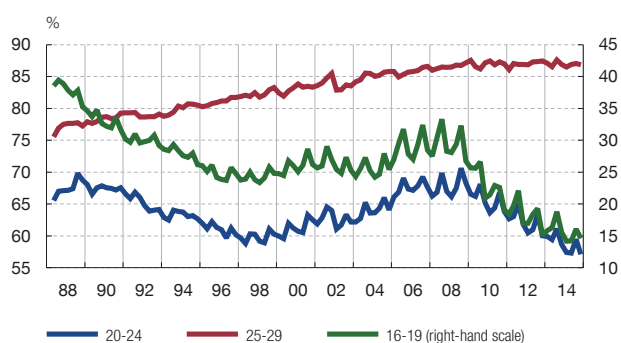
Potential determinants of the participation rate

An additional empirical exercise is carried out in this section to try to analyse in greater depth the main determinants of the participation rate, beyond the cyclical behaviour described in the previous section. The exercise performed is an econometric estimation,⁸ which relates the participation rate of the population groups based on sex and nationality to the main factors that have been found in the literature to affect the decision to participate in the labour market.⁹ These factors include, first, the real wage and households' potential earnings, which are approximated by the average real wage of the economy and the educational attainment of each demographic group. In addition, a number of factors linked to the reservation wage faced by the household are incorporated, the effect of which (given that aggregate data are used) is ambiguous, since they may either encourage or discourage labour-market participation, depending on the population group concerned. These factors are the economy's minimum wage, the average retirement pension and the

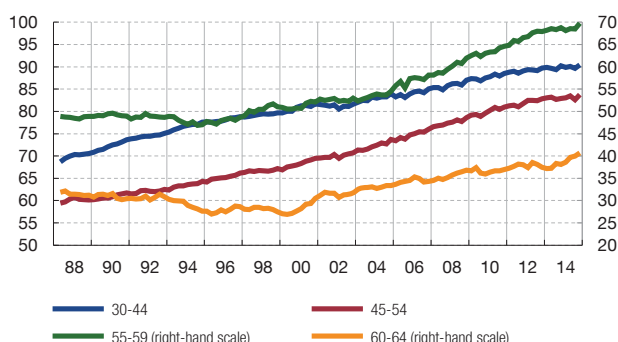
8 For the details of this exercise, see Montero and Regil (2015).

9 See, inter alia, Cullison (1979), Bover and Arellano (1994) or Fortin and Fortin (1999).

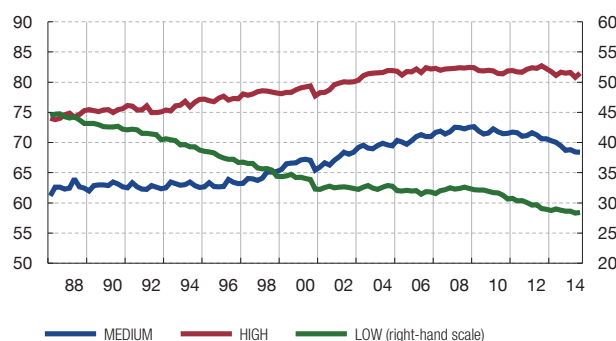
YOUTH PARTICIPATION RATE



PARTICIPATION RATE FOR THE POPULATION AGED 30-64



PARTICIPATION RATE BY EDUCATIONAL ATTAINMENT (b)



UNEMPLOYMENT RATE BY EDUCATIONAL ATTAINMENT (b)



SOURCES: INE and Banco de España.

- a Series constructed in the Directorate Economics, Statistics and Research of the Banco de España, without correcting for the change in the definition of unemployment in 2001. Calculated as a proportion of the population over the age of 16.
- b Since 2002, series compiled according to the CNED-2014. Previously, series constructed at the Banco de España. Low: no or only primary education, or first stage of secondary education not completed or without diploma. High: tertiary education.

(average) contributory unemployment benefit. The “additional worker” effect is taken into account by including the unemployment rate corresponding to the household’s main worker.¹⁰ The impact of the “discouraged worker” effect is approximated using the unemployment rate of the relevant population group. Finally, as regards “sociological factors” of a more structural nature, the fertility rate is included, a variable that the literature for Spain [Bover and Arellano (1994)] has identified as very closely related to labour market participation, especially that of females.

Table 1 contains a selection of the main results of the estimation exercise for the four demographic groups considered. Beginning with the variables that attempt to approximate the cyclical effects, the unemployment rate has a statistically significant negative coefficient in the case of all the groups, except Spanish women. In addition, its magnitude is very similar for Spanish and foreign males (around -0.15), while it is higher (in absolute terms) in the case of foreign women.¹¹ For Spanish women, the additional worker effect would only be significant during the crisis period that started in 2008.¹² On the other hand, real

¹⁰ Specifically, the male unemployment rate is introduced into the regressions of the female participation rate.
¹¹ Thus, once a broader set of factors is taken into account, the results of the previous section regarding the apparent lack of cyclicity of the supply of foreign female labour are qualified.
¹² I.e. this variable is only significant when included for the period 2008-2014.

AVERAGE MARGINAL EFFECT (dy/dx) ON THE PARTICIPATION RATE
GLM-LOGIT ESTIMATOR (a) (b)

TABLE 1

	Spanish women	Spanish men	Foreign women	Foreign men
Unemployment rate	0.0394 (0.0289)	-0.140*** (0.0284)	-0.350*** (0.118)	-0.152*** (0.0468)
Male unemployment rate	0.0632** (0.0268)		0.0124 (0.0625)	
Real wage	0.0156 (0.0869)	0.236*** (0.0848)	-0.0220 (0.285)	0.916*** (0.135)
Real minimum wage	-0.115*** (0.0118)	-0.0950*** (0.0149)	-0.602*** (0.161)	-0.860*** (0.0875)
Real retirement pension	0.0394 (0.0781)	-0.194** (0.0837)	0.249 (0.257)	-0.224 (0.147)
Real unemployment benefit	0.124*** (0.0458)	-0.00556 (0.0435)	0.844*** (0.211)	0.534*** (0.159)
Higher education	0.855*** (0.237)	0.841*** (0.225)	-0.105 (0.348)	-0.419*** (0.104)
Medium education	0.441*** (0.0955)	0.210* (0.127)	1.022*** (0.328)	0.601*** (0.0774)
Fertility	0.175*** (0.0339)	0.0560* (0.0305)	-0.136*** (0.0484)	-0.1000*** (0.0259)
No. of observations	73	73	70	70

SOURCE: Banco de España.

a Standard errors in brackets.
b *** p<0.01, ** p<0.05, * p<0.1.

wage growth seems to have been relevant only for men, with a positive coefficient in both cases, although its impact is larger in the case of foreign workers.

Regarding the institutional factors relating to the economy's reservation wage, subject to the qualifications mentioned above, the minimum wage appears to have a negative impact on participation decisions,¹³ whereas the level of the average retirement pension only seems to have a significant (and negative) effect for Spanish men. Finally, the average unemployment benefit has a positive impact on the participation decisions of all the groups, except for Spanish males, with a higher elasticity in the case of foreign workers.

As for the factors of a more structural nature, the coefficient associated with higher education¹⁴ is very relevant to the participation decisions of Spanish nationals, while, for foreigners, medium educational attainment plays a more significant role. The fertility rate has a positive effect on the participation rate of Spanish men, which would be consistent with greater participation by family heads with a larger number of children. In the case of women, the marginal effect of fertility on the participation rate of Spanish women is also

¹³ In this case, the negative effect that the minimum wage may have on the employment possibilities of certain population groups, mainly the young and lower skilled, seems to predominate over the positive impact on expected earnings.

¹⁴ In this case, the marginal effects should be interpreted in relation to the low educational attainment category, which is omitted in order to avoid problems of multicollinearity.

positive, in contrast to the results for previous periods,¹⁵ while for foreign women it is estimated to be negative.

Conclusions

In contrast to its behaviour in previous recessions, the participation rate has held steady since the start of the crisis. This change in the cyclical pattern of the participation rate has been particularly marked in certain groups, such as Spanish women, persons with a higher education and middle and older age groups. On the other hand, the participation decisions of males, young persons and those with a medium or low level of education have displayed greater cyclical sensitivity over the last six years. This reduction in the cyclical sensitivity of the aggregate participation rate can be explained by factors such as the entry of additional household members into the labour market to sustain the level of household income in response to the rise in unemployment, against a background of high household indebtedness¹⁶ and wealth losses, which have been greater than in other recessions and may also have affected the supply of labour. In addition, the successive reforms to the pension system have also been conducive to older age groups remaining in the labour force. Finally, mention should also be made of the factors (mainly associated with cohort effects) that have helped to support the female participation rate.

Beyond its cyclical behaviour, the analysis of the determinants of labour market participation highlights the role played by various institutional factors. In particular, in the case of Spain, aspects such as the average level of education, changes in the fertility rate, the level of the minimum wage and the pensions system and unemployment benefits are relevant to the labour market participation decisions of individuals. Against a background of population ageing, as is projected for the Spanish economy, these institutional arrangements need to be designed to ensure that participation rates remain high, so they can at least partially offset the expected decline in the population of working age.

19.5.2015.

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¹⁵ See, for example, Bover and Arellano (1994), who estimate a negative relationship between these two variables for Spanish women aged 25-44 in the period 1976-1991. However, it would be consistent with Ahn and Mira (2002), who find that the traditional negative correlation between the participation rate and fertility turned abruptly positive at the end of the 1980s when they study the behaviour of these variables for a panel of OECD countries over the period 1970-1995. Factors mentioned by these authors as linked to this change (which might help to explain the results obtained here) include the increase in child care services, which have made it easier to reconcile fertility with labour supply. In addition, within the framework of certain theoretical models in which childcare is considered to be a normal good (similar to leisure), the increase in income arising from a prolonged economic upturn should lead to greater consumption of children.

¹⁶ See Montero (2011) on this point.