Economic crisis and regional resilience in Spain. The role of entrepreneurship

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According to the OECD, strengthening economic resilience is a key policy priority in order to reduce the vulnerability of economies to crises at the same time that reinforce their capacity to absorb and overcome severe shocks while supporting strong growth. Martin and Sunley (2015) have defined regional economic resilience as "the capacity of a regional or local economy to withstand or recover from market, competitive and environmental shocks to its developmental growth path" (p. 13).

In the definition of economic resilience, entrepreneurial activity can play a key role (Martin, 2012; Martin and Sunley, 2015). Therefore, the analysis of determinants of entrepreneurial resilience can help to understand why some regions can retain a higher level of entrepreneurial activity than others. Williams and Borley (2014) state that entrepreneurship is critical to the restructuring and adaptation of local economies. It is a way of promoting diversification and capacity building, two features that characterize resilient economies. The authors conclude that "the diversity and flexibility of entrepreneurs represents an integral source of resilience to exogenous shocks and is also critical to an economy's competitiveness and growth" (p. 260). Huggins and Thompson (2015) study how community culture affects entrepreneurial resilience. The authors define 'community culture' as social structure and features of group life within localities. Their results suggest that openness and diversity of local community cultures are positively associated with the renewal and reorientation of local entrepreneurship in UK.

Therefore, a general objective of this paper is to study entrepreneurial resilience for the case of Spanish regions. Given the emphasis in promoting self-employment during the last years, it is valuable to analyse how entrepreneurship contributes to the recovery after economic downturn and if it can limit the negative effect of the crisis.

Following Huggins and Thompson (2015), as measures of entrepreneurial resilience, we will use the variation in firm births and deaths. As variables explaining entrepreneurial resilience, we will use data related to the characteristics of the population (age, immigration, level of education), the industry structure and the economic conditions. All these variables can be found in wellknown datasets such as the Harmonized Business Demographic, the Labour Force Survey, Registers from the Ministry of Employment and Social Security and the Census.

Martin et al. (2016) analyse how UK regions has reacted to the four major recessions in the last forty years. They focused in the measurement of the resistance and the recoverability using falls and increases of the indicator variable (employment) but they consider such as "a more convincing approach the comparison of these movements to expected or counterfactual falls and increases in the regions analysed". In addition to this preliminary analysis, the role of industrial structure is introduced in the analyse of regions reactions to shocks. To answer these questions, they apply a traditional decomposition technique (shift-share analysis). This tool allows the decomposition of the changes in the regional employment levels in two effects, which are called sectoral and competitive effect but they not include explicitly the existence of spatial linkages between regions. Consequently, we propose the introduction of this spatial structure using spatial shift-share models (Mayor and López, 2008). The hypothesis is that one shock affecting the evolution of the employment in a certain region or municipality may also affect the employment levels in the neighbouring regions. This simultaneity should be incorporated at least in the empirical models to calibrate with a higher accuracy the regional response to recession and consequently obtain a good measure of their resilience.

In the following figure, we present the evolution of the Spanish employment rate for the period 1976-2016. There have been three main recessions namely 1976-1985, 1991-1994 and 2007-2013. The downturn of 1991-1994 was less severe than the other two in terms of job destruction.





Source: LFS.

The series in Figure 2 suggest that the intensity of employment contraction have varied across regions. And, also, the speed and extent of the recovery are quite different. However, there are differences among the three recessions. During the first one, the evolution of employment was similar for all the regions. The recovery of that crisis shows the beginning of divergence. Madrid, the East and the West recover quickly the pre-recession level of employment. On the other side, the North West keeps the level of employment of the crisis, only with a slight increase before the onset of the following crisis. In the same way, job destruction in 1991-1994 was similar for all the regions but, again, the recovery was quicker for the East, the South and Madrid. Employment recuperation was much longer for the West, the Center and the North East. In fact, these regions recover the pre-recession level of employment in 1999-2000, three years later than the former ones. Regarding the downturn of 2007-2013, the employment destruction was stronger for the South and the East than for the rest of the country. Moreover, the recovery is clear for these regions and for Madrid while it is still pending for the other regions.

Therefore, we can conclude for these figures that the impact of the recessions on employment is quite similar for all the regions while the recovery is quite different in terms of speed and intensity.



Figure 2. Employment in the Spanish regions (NUTS-1). 1976Q3-2016Q1

Source: LFS.

We have measured resistance and recovery following the equations by Martin et al. (2016). Both indicators compare the contraction and expansion of a region in relation to a 'counterfactual' which is the national economy. The two measures are centred around zero giving a 2x2 configuration of resilience possibilities. Regions can have strong resistance (more than zero) and strong recovery (more than zero). These are the most resilient regions meaning that they destroy less employment than the national economy and they recover quickly. The least resilient regions are those with weak resistance (less than zero) and weak recovery (less than zero) meaning that they destroy more employment than the national economy and they nave a slow recovery. Obviously, we can also have regions with strong (weak) resistance and weak (strong) recovery.

This typology is shown in Figure 3 for each recession-recovery cycle. Apart from the last cycle, there has been a negative relationship between resistance and recovery across regions, that is, regions than have been less resistance to recession have enjoyed the strongest recovery. This relationship is particularly strong in the case of the period 1991-2007. In the case of the last cycle, there is a different pattern, with a positive relationship between resistance and recovery. However, we have to take into account that job creation is still a weak process, meaning that the cycle is not complete.

There are certain regions that tend to recover strongly with, in general, low resistance to recession. This is the case of the South, the East and Madrid. At the same time, other regions – specially the North West- display weak recovery in the three recessions.





The most resilient regions are those with good resistance and good recovery while the least resilient are those with weak resistance and weak recovery. According to our analysis, none of the NUTS1 Spanish regions are resilient for the three considered periods. However, the South and the East have good performance in 2 out of the 3 cases. On the other side, none of the regions performs in terms of weak resistance and weak recovery, although the North East is situated in this quadrant in 2 out of the 3 recessions.

Our interest in this paper is to study the role of self-employment in resilience and recovery. As it can be observed in Figure 4 the three main recessions -namely 1976-1985, 1991-1994 and 2007-2013- explained for the whole economy are not equally represented. Self-employment is more stable than wage employment, especially during the recovery period. Employment growth during the second half of the eighties was much lower in the case of self-employment. In fact, while a relevant increase in wage employment is observed, the number of self-employed workers remains stable or even decrease. In the same way, employment growth was really high for the case of wage employment from 1994 to 2007 while, only at the end of this period, self-employment increases.



Figure 4. Employment in Spain by labour status, 1976Q3-2016Q1 (1976Q3=100)

Source: LFS.

Self-employment rates are quite different across regions. While in some of them selfemployment rate is below 15% (Madrid), in other ones it is over 25% (Baleares, Aragón, Galicia, La Rioja). Since self-employment is more stable than wage employment, those regions with high rates of entrepreneurship can have more resistance to recessions, although less speed of recovery. The analysis will allow us to explain the contribution of self-employment to resilience. Regarding to the self-employment resilience in the Spanish province, we use the information from the Social Security database and these are the results in terms of resistance and recovery.







Source: own elaboration.



Recession 2008-2013, Recovery 2013-2016

Source: own elaboration.

The most interesting difference is the number of resilient regions which is less than the same figure when the wages employment is analyzed. Only Madrid is a resilient region in both periods.

Shift-share decomposition

Shift-share analysis allow us to decompose the change in the number of self-employment workers in three effects: national, sectoral and competitive effect.

$$E_{ij}^{t} - E_{ij}^{t-1} = E_{ij}^{t-1}r + E_{ij}^{t-1}(r_i - r) + E_{ij}^{t-1}(r_{ij} - r_i)$$

In the next figures, we compute the relative contribution of the sectoral and competitive effects during the last recession and recovery periods in comparison with the hypothetical regional growth (the contrafactual).

$$\frac{E_{ij}^{t} - E_{ij}^{t-1}(r_{t,t-1})}{E_{ij}^{t-1}(r_{t,t-1})} = \frac{ES_{ij}}{E_{ij}^{t-1}(r_{t,t-1})} + \frac{EC_{ij}}{E_{ij}^{t-1}(r_{t,t-1})}$$

Figure 6. Sectoral and competitive effect, 2008-2013. Self-employment





Figure 7. Sectoral and competitive effect, 2013-2015. Self-employment

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