## ***Supplementary Materials***

***Note S1.*** **Linear relation linking the sub-annual disaggregated series with its 'independent' components**

Calling $\mathbf{I}_v$ the identity matrix of order $v \in \mathbb{Z}$, defining the diagonal matrices

$$\mathbf{C}_i = \begin{pmatrix} c_{i,1}/c_{R,1} & \dots & 0 \\ . & . & . \\ . & . & . \\ . & . & . \\ 0 & \dots & c_{i,N}/c_{R,N} \end{pmatrix}, \quad i = 1,\dots,R-1,$$

and denoting $\mathbf{A} = (\mathbf{I}_{m-1}, -\iota_{m-1})'$, for $\iota_{m-1}$ being the vector of dimension $m-1$ $\iota_{m-1} = (1,\dots,1)'$, we can write $\mathbf{W} = \begin{pmatrix} \mathbf{W}_1 \\ \mathbf{W}_2 \end{pmatrix}$, being

$$\mathbf{W}_1 = \mathbf{I}_{R-1} \otimes \begin{pmatrix} \mathbf{I}_N \otimes \mathbf{A} & \mathbf{0} \\ \mathbf{0} & \mathbf{I}_r \end{pmatrix}$$

and

$$\mathbf{W}_2 = \left( -\begin{pmatrix} \mathbf{C}_1 \otimes \mathbf{A} & \mathbf{0} \\ \mathbf{0} & \frac{c_{1,N+1}}{c_{R,N+1}} \cdot \mathbf{I}_r \end{pmatrix}, \dots, -\begin{pmatrix} \mathbf{C}_{R-1} \otimes \mathbf{A} & \mathbf{0} \\ \mathbf{0} & \frac{c_{R-1,N+1}}{c_{R,N+1}} \cdot \mathbf{I}_r \end{pmatrix} \right).$$

It should be pointed out that matrices $\mathbf{I}_r$ included in both $\mathbf{W}_1$ and $\mathbf{W}_2$ should be removed if only complete years are present.

We now calculate a vector $\mathbf{y}_v$, first taking

$$\mathbf{y}_{v1} = \left(\mathbf{y}_1^1{}', \dots, \mathbf{y}_N^1{}', \dots, \mathbf{y}_1^{R-1}{}', \dots, \mathbf{y}_N^{R-1}{}', \mathbf{q}^*{}'\right)'$$

where

$$\mathbf{y}_T^i = \left(\mathbf{0}_{m-1}', a_T^i, \mathbf{0}_r'\right)', \quad T = 1,\dots,N,\ i = 1,\dots,R,$$

and with the zero vectors defined as zero-valued column vectors of the corresponding order and removing the zero matrix of order $r$ when only complete years are present.

In addition, we take $\mathbf{Y}_{v2} = \begin{pmatrix} \mathbf{Y}_{v21} \\ \mathbf{Y}_{v22} \end{pmatrix}$, being

$$\mathbf{Y}_{v21} = m \cdot \left( \mathbf{I}_{(R-1)(Nm+r)} \,\middle|\, \mathbf{0}_{(R-1)(Nm+r),(Nm+r)} \right)$$

and

$$\mathbf{Y}_{v22} = \left( -m \begin{pmatrix} \mathbf{C}_1 \otimes \mathbf{I}_m & \mathbf{0} \\ \mathbf{0} & \frac{c_{1,N+1}}{c_{R,N+1}} \cdot \mathbf{I}_r \end{pmatrix}, \ldots, -m \begin{pmatrix} \mathbf{C}_{R-1} \otimes \mathbf{I}_m & \mathbf{0} \\ \mathbf{0} & \frac{c_{R-1,N+1}}{c_{R,N+1}} \cdot \mathbf{I}_r \end{pmatrix}, \begin{pmatrix} \frac{1}{c_{R,1}}\mathbf{I}_m & \ldots & \mathbf{0} & \\ . & . & . & \\ . & . & . & \mathbf{0} \\ . & . & . & \\ \mathbf{0} & \ldots & \frac{1}{c_{R,N}}\mathbf{I}_m & \\ & \mathbf{0} & & \frac{1}{c_{R,N+1}} \cdot \mathbf{I}_r \end{pmatrix} \right).$$

(the above modifications are also applied here when only complete years are present). Finally, we obtain $\mathbf{y}_v = \mathbf{Y}_{v2} \cdot \mathbf{y}_{v1}$ .

In conclusion, we have obtained the linear relation linking $\mathbf{x}$ and $\mathbf{x}^r$,

$$\mathbf{x} = \mathbf{W}\mathbf{x}^r + \mathbf{y}_v ,$$

with $\mathbf{W}$ and $\mathbf{y}_v$ being the matrix and vector obtained above.

**Table S1. Pearson correlations between Indicator and Regional Estimated Series**

| | *Levels* | *Annual growth rates,* $t_{(4,1)}$ | *Quarterly growth rates,* $t_{(1,1)}$ |
|---|---|---|---|
| Andalucía (AND) | 0.928 | 0.959 | 0.877 |
| Aragón (ARA) | 0.888 | 0.907 | 0.827 |
| Asturias (AST) | 0.873 | 0.954 | 0.892 |
| Baleares (BAL) | 0.942 | 0.900 | 0.785 |
| Canarias (CAN) | 0.764 | 0.882 | 0.810 |
| Cantabria (CBR) | 0.964 | 0.946 | 0.868 |
| Castilla y León (CYL) | 0.880 | 0.959 | 0.904 |
| Castilla la Mancha (CLM) | 0.859 | 0.925 | 0.835 |
| Cataluña (CAT) | 0.832 | 0.940 | 0.846 |
| Comunidad Valenciana (CVA) | 0.779 | 0.939 | 0.900 |
| Extremadura (EXT) | 0.919 | 0.885 | 0.761 |
| Galicia (GAL) | 0.691 | 0.966 | 0.900 |
| Madrid (MAD) | 0.912 | 0.943 | 0.857 |
| Murcia (MUR) | 0.843 | 0.895 | 0.849 |
| Navarra (NAV) | 0.870 | 0.959 | 0.901 |
| País Vasco (PVA) | 0.827 | 0.942 | 0.842 |
| La Rioja (RIO) | 0.908 | 0.921 | 0.846 |
| Ceuta (CEU) | 0.982 | 0.654 | 0.706 |
| Melilla (MEL) | 0.969 | 0.510 | 0.728 |
| España (ESP) | 0.862 | 0.967 | 0.920 |

Source: own elaboration

**Table S2. Regional quarterly growth rates for the last 28 quarters**

This table shows the particular regional features for annual growth rates (obviously determined by both the SSC path and annual growth rates). These specificities are highlighted in the table by green shading the quarters with annual growth rates that exceed national ones.

| | 2012 | | | | 2013 | | | | 2014 | | | | 2015 | | | | 2016 | | | | 2017 | | | | 2018 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| AND | -2.3 | -3.1 | -3.8 | -4.5 | -4.0 | -2.9 | -2.0 | 0.0 | 1.0 | 1.2 | 2.0 | 2.2 | 2.9 | 3.4 | 3.6 | 3.7 | 3.2 | 3.0 | 2.9 | 2.4 | 2.5 | 2.9 | 2.6 | 2.8 | 2.6 | 2.3 | 2.3 | 2.3 |
| ARA | -4.4 | -4.8 | -4.5 | -3.9 | -1.2 | 0.1 | 0.7 | 1.4 | 0.9 | 1.1 | 1.1 | 1.2 | 1.1 | 1.2 | 1.6 | 2.2 | 2.9 | 3.2 | 3.4 | 3.3 | 3.2 | 3.5 | 3.4 | 3.3 | 3.0 | 2.6 | 2.4 | 2.1 |
| AST | -3.4 | -4.1 | -4.6 | -4.9 | -4.5 | -4.0 | -3.2 | -2.1 | -1.5 | -0.7 | 0.0 | 0.7 | 2.1 | 2.7 | 2.8 | 2.6 | 1.7 | 1.3 | 1.4 | 1.9 | 3.3 | 4.0 | 4.0 | 3.7 | 3.0 | 2.5 | 2.1 | 1.5 |
| BAL | -1.5 | -1.6 | -1.4 | -1.9 | -2.7 | -2.4 | -1.8 | -0.6 | 1.5 | 2.8 | 3.6 | 4.0 | 3.5 | 3.2 | 3.3 | 4.1 | 4.5 | 4.7 | 4.6 | 3.7 | 2.8 | 2.6 | 2.3 | 2.0 | 2.3 | 2.0 | 2.0 | 2.3 |
| CAN | -2.1 | -2.7 | -2.8 | -2.5 | -2.4 | -1.8 | -1.0 | -0.2 | 0.1 | 0.5 | 1.1 | 1.5 | 2.5 | 3.1 | 3.2 | 3.3 | 3.2 | 3.4 | 3.6 | 3.5 | 2.9 | 2.8 | 2.5 | 2.4 | 2.5 | 2.4 | 2.3 | 2.4 |
| CBR | -2.3 | -2.2 | -2.4 | -3.3 | -4.2 | -4.4 | -3.7 | -2.3 | -0.4 | 1.2 | 2.0 | 2.6 | 2.9 | 2.6 | 2.1 | 2.0 | 2.0 | 2.2 | 3.0 | 3.2 | 3.3 | 3.4 | 3.4 | 3.4 | 3.7 | 3.7 | 3.3 | 2.7 |
| CYL | -2.7 | -3.6 | -4.0 | -4.4 | -3.7 | -2.9 | -2.2 | -1.2 | -0.8 | -0.2 | 0.6 | 1.2 | 1.9 | 2.5 | 2.7 | 3.0 | 3.4 | 3.2 | 3.1 | 2.7 | 1.9 | 1.6 | 1.5 | 1.9 | 2.5 | 2.7 | 2.6 | 2.1 |
| CLM | -4.5 | -5.2 | -5.2 | -5.0 | -2.7 | -1.0 | 0.3 | 0.7 | -1.5 | -2.0 | -1.7 | -0.4 | 2.2 | 3.9 | 4.3 | 4.7 | 4.5 | 4.3 | 4.4 | 3.6 | 2.7 | 2.2 | 1.9 | 2.7 | 2.9 | 2.9 | 3.0 | 2.5 |
| CAT | -2.7 | -2.8 | -3.0 | -3.4 | -2.9 | -1.9 | -1.2 | 0.1 | 1.0 | 1.4 | 2.2 | 2.6 | 3.4 | 4.0 | 4.5 | 4.9 | 4.1 | 3.8 | 3.3 | 2.8 | 3.2 | 3.4 | 3.1 | 3.3 | 2.7 | 2.2 | 2.0 | 2.1 |
| CVA | -3.4 | -3.8 | -4.2 | -4.0 | -3.1 | -2.1 | -1.0 | 0.4 | 1.2 | 1.9 | 2.6 | 2.8 | 3.2 | 3.5 | 3.6 | 3.6 | 3.1 | 2.8 | 2.8 | 2.5 | 2.9 | 3.2 | 3.2 | 3.1 | 2.5 | 2.1 | 1.9 | 1.9 |
| EXT | -3.3 | -3.7 | -3.5 | -3.2 | -2.1 | -1.3 | -0.8 | 0.1 | -0.8 | -0.4 | 0.1 | 0.6 | 2.6 | 3.2 | 3.2 | 3.0 | 2.1 | 1.6 | 1.6 | 1.6 | 1.7 | 2.2 | 2.2 | 2.3 | 2.2 | 2.0 | 2.0 | 1.8 |
| GAL | -2.7 | -2.9 | -2.7 | -2.7 | -2.4 | -1.8 | -1.4 | -0.8 | -0.4 | 0.1 | 1.0 | 1.8 | 3.5 | 4.4 | 4.6 | 4.5 | 3.5 | 3.1 | 2.9 | 2.8 | 3.0 | 3.2 | 3.2 | 3.2 | 3.2 | 3.0 | 2.7 | 1.9 |
| MAD | -0.7 | -1.3 | -1.9 | -2.7 | -2.7 | -2.0 | -1.7 | -0.4 | 0.6 | 1.0 | 1.9 | 2.3 | 3.0 | 3.7 | 4.3 | 4.6 | 3.9 | 3.5 | 3.0 | 2.5 | 2.9 | 3.3 | 3.3 | 3.8 | 3.8 | 3.7 | 3.7 | 3.5 |
| MUR | -2.7 | -2.9 | -3.0 | -3.2 | -2.6 | -2.0 | -1.1 | -0.1 | 0.6 | 1.7 | 2.5 | 3.9 | 6.0 | 6.8 | 7.1 | 6.7 | 5.0 | 4.3 | 4.1 | 3.7 | 3.5 | 3.4 | 3.1 | 2.6 | 1.9 | 1.5 | 1.3 | 1.2 |
| NAV | -2.7 | -3.4 | -3.7 | -3.5 | -2.4 | -1.5 | -0.7 | 0.4 | 1.4 | 2.1 | 2.7 | 2.9 | 2.7 | 2.8 | 2.8 | 3.1 | 3.1 | 3.1 | 3.0 | 2.9 | 2.7 | 2.7 | 2.9 | 3.0 | 3.2 | 3.3 | 3.0 | 2.5 |
| PVA | -1.2 | -1.4 | -1.7 | -2.5 | -3.0 | -2.8 | -2.3 | -1.0 | 0.7 | 1.7 | 2.5 | 3.0 | 3.3 | 3.5 | 3.6 | 3.7 | 3.3 | 3.1 | 2.9 | 2.8 | 3.0 | 3.2 | 3.1 | 3.1 | 2.7 | 2.4 | 2.1 | 1.6 |
| RIO | -3.2 | -3.4 | -3.8 | -4.4 | -4.1 | -3.6 | -3.2 | -1.5 | -0.8 | 0.2 | 1.4 | 1.9 | 2.9 | 3.3 | 3.5 | 3.2 | 2.9 | 2.7 | 2.4 | 2.3 | 1.7 | 1.5 | 1.4 | 1.4 | 1.7 | 1.7 | 1.5 | 1.5 |
| CEU | -1.7 | -1.6 | -2.3 | -1.7 | -0.1 | 0.6 | 0.6 | 0.2 | -1.3 | -1.1 | 0.1 | 1.0 | 2.2 | 2.6 | 2.9 | 3.2 | 2.8 | 2.1 | 1.8 | 1.4 | 1.5 | 1.9 | 1.5 | 1.5 | 1.1 | 1.4 | 1.4 | 2.2 |
| MEL | -0.8 | -1.9 | -1.7 | -2.9 | -1.4 | 0.0 | 0.0 | 1.1 | 0.6 | 0.8 | 1.8 | 1.6 | 2.1 | 2.6 | 2.8 | 3.4 | 2.7 | 2.1 | 2.8 | 2.0 | 1.6 | 1.9 | 1.3 | 2.5 | 1.4 | 1.1 | 1.3 | 2.4 |
| ESP | -2.3 | -2.8 | -3.1 | -3.5 | -3.0 | -2.1 | -1.5 | -0.2 | 0.5 | 1.0 | 1.8 | 2.2 | 3.0 | 3.6 | 3.9 | 4.1 | 3.6 | 3.3 | 3.1 | 2.7 | 2.9 | 3.1 | 2.9 | 3.1 | 2.9 | 2.6 | 2.5 | 2.3 |

Source: own elaboration

**Table S3. Regional quarterly growth rates for the 2009 Great Recession**

This table shows the behaviour of Spanish regions in the context of the 2009 recession. Green coloured cells show annual growth rates above 1%. Yellow coloured cells are used for negative rates, and red coloured cells represent the troughs for the contraction phase. Readers can observe the synchronicity of the annual growth rate cycle, which generally starts to contract in 2008:4 and resumes positive growth in 2010:2 (six quarters in negative). It also shows the general agreement on the worst quarter in terms of growth rates (2009:2).

| | 2008 | | | | 2009 | | | | 2010 | | | | 2011 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** |
| AND | 2.7 | 1.8 | -0.1 | -1.8 | -3.6 | **-4.3** | -3.6 | -2.9 | -1.9 | -1.2 | -1.0 | -0.6 | -0.1 | -0.4 | -0.6 | -1.3 |
| ARA | 3.7 | 2.7 | 1.1 | -1.5 | -3.3 | **-4.5** | -4.1 | -2.3 | -0.3 | 0.9 | 1.3 | 0.8 | -0.6 | -1.4 | -2.2 | -3.1 |
| AST | 2.8 | 2.0 | 0.7 | -1.4 | -4.5 | **-5.7** | -5.6 | -4.2 | -0.9 | 0.6 | 1.1 | 0.8 | -0.4 | -1.0 | -1.6 | -2.4 |
| BAL | 3.4 | 2.5 | 0.8 | -1.3 | -3.6 | **-4.7** | **-4.5** | -3.2 | -1.6 | -0.5 | 0.2 | 0.5 | 0.2 | 0.2 | -0.2 | -1.2 |
| CAN | 2.3 | 1.1 | -0.5 | -2.5 | -4.6 | **-5.4** | -4.7 | -3.0 | -0.4 | 1.2 | 1.7 | 1.6 | -0.2 | -0.6 | -1.1 | -2.0 |
| CBR | 2.6 | 1.6 | 0.3 | -1.7 | -3.6 | **-4.3** | -4.2 | -3.1 | -1.3 | -0.4 | 0.0 | -0.3 | -1.8 | -2.5 | -2.9 | -3.0 |
| CYL | 2.3 | 1.4 | 0.0 | -1.5 | -2.9 | **-3.5** | -3.1 | -2.2 | -0.5 | 0.3 | 0.5 | 0.6 | 0.1 | -0.3 | -0.8 | -1.7 |
| CLM | 5.3 | 4.0 | 2.2 | -0.4 | -2.4 | **-3.4** | -3.0 | -1.8 | -0.7 | -0.1 | 0.0 | -0.2 | -0.7 | -1.3 | -2.3 | -3.4 |
| CAT | 2.1 | 1.4 | -0.1 | -1.8 | -3.4 | **-4.3** | -3.7 | -2.9 | -0.8 | 0.5 | 0.8 | 0.7 | -0.7 | -1.9 | -2.5 | -2.9 |
| CVA | 3.2 | 2.3 | 0.3 | -2.2 | -5.3 | **-6.6** | -6.0 | -4.5 | -2.1 | -0.5 | 0.2 | 0.2 | -1.0 | -1.7 | -2.2 | -2.9 |
| EXT | 3.8 | 2.9 | 1.4 | -0.5 | -2.7 | **-3.2** | -2.7 | -1.3 | 0.6 | 1.2 | 1.1 | 0.6 | -0.5 | -1.3 | -1.9 | -2.8 |
| GAL | 3.9 | 3.1 | 1.7 | -0.3 | -3.0 | **-4.2** | -4.0 | -3.1 | -0.6 | 0.6 | 0.8 | 0.3 | -1.1 | -2.0 | -2.6 | -2.8 |
| MAD | 3.1 | 2.6 | 1.2 | -0.3 | -1.7 | **-2.7** | -2.4 | -2.2 | -0.9 | 0.1 | 0.4 | 0.9 | 1.1 | 0.7 | 0.6 | 0.1 |
| MUR | 4.4 | 3.4 | 1.5 | -1.1 | -4.2 | **-5.3** | -5.1 | -3.7 | -1.4 | 0.0 | 0.9 | 0.9 | -0.4 | -1.2 | -1.8 | -2.3 |
| NAV | 3.9 | 3.2 | 1.9 | -0.4 | -3.1 | **-4.4** | -4.4 | -3.1 | -1.0 | 0.3 | 1.0 | 1.2 | 0.9 | 0.5 | -0.1 | -1.2 |
| PVA | 2.8 | 2.3 | 1.2 | -0.5 | -3.2 | **-4.6** | -4.6 | -3.5 | -0.6 | 1.1 | 1.6 | 1.3 | 0.1 | -0.7 | -1.2 | -1.4 |
| RIO | 3.9 | 3.1 | 1.5 | -0.8 | -4.1 | **-5.2** | -4.8 | -3.4 | -0.6 | 0.6 | 1.1 | 0.9 | -1.0 | -1.7 | -2.3 | -3.0 |
| CEU | 1.7 | 2.0 | 2.2 | 1.3 | 0.2 | -1.6 | **-2.7** | -2.4 | -0.3 | 1.1 | 2.2 | 2.5 | 1.2 | 0.5 | 0.3 | -1.1 |
| MEL | 1.8 | 1.9 | 1.4 | 0.7 | 0.0 | -1.5 | **-2.9** | -1.7 | 0.3 | 0.3 | 1.3 | 0.7 | 0.4 | 1.4 | 0.2 | 0.3 |
| ESP | 3.0 | 2.2 | 0.6 | -1.3 | -3.3 | **-4.3** | -3.8 | -2.9 | -1.0 | 0.1 | 0.5 | 0.5 | -0.2 | -0.8 | -1.3 | -1.8 |

*Notes*: green cells for regional growths of 1% or more, yellow cells for negative annual growths. Red cells show the most recessionary quarter for each region.
*Source*: own elaboration

**Table S4. Regional quarterly growth rates for the 2012 Recession**

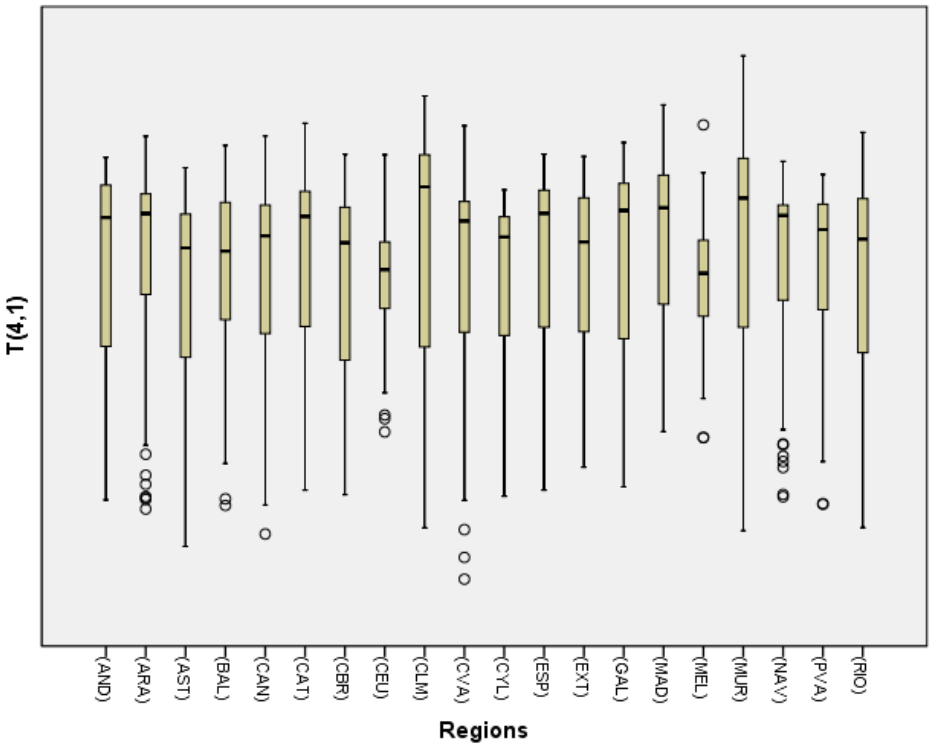
This table shows the regional evolution of the annual growth rates for the second recession in the Double Dip. The most contractionary quarter is 2012:4. Generally speaking, after 2011:4, the recession becomes widespread and regions returned to positive growth rates in 2013:4. Although the greatest contraction seems to be in 2012:4, this second recession is longer, less uniform and not as deep as the first.

| | 2011 | | | | 2012 | | | | 2013 | | | | 2014 | | | | 2015 | | | | 2016 | | | | 2017 | | | | 2018 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** |
| AND | -0.1 | -0.4 | -0.6 | -1.3 | -2.3 | -3.1 | -3.8 | **-4.5** | -4.0 | -2.9 | -2.0 | 0.0 | 1.0 | 1.2 | 2.0 | 2.2 | 2.9 | 3.4 | 3.6 | 3.7 | 3.2 | 3.0 | 2.9 | 2.4 | 2.5 | 2.9 | 2.6 | 2.8 | 2.6 | 2.3 | 2.3 | 2.3 |
| ARA | -0.6 | -1.4 | -2.2 | -3.1 | -4.4 | **-4.8** | -4.5 | -3.9 | -1.2 | 0.1 | 0.7 | 1.4 | 0.9 | 1.1 | 1.1 | 1.2 | 1.1 | 1.2 | 1.6 | 2.2 | 2.9 | 3.2 | 3.4 | 3.3 | 3.2 | 3.5 | 3.4 | 3.3 | 3.0 | 2.6 | 2.4 | 2.1 |
| AST | -0.4 | -1.0 | -1.6 | -2.4 | -3.4 | -4.1 | -4.6 | **-4.9** | -4.5 | -4.0 | -3.2 | -2.1 | -1.5 | -0.7 | 0.0 | 0.7 | 2.1 | 2.7 | 2.8 | 2.6 | 1.7 | 1.3 | 1.4 | 1.9 | 3.3 | 4.0 | 4.0 | 3.7 | 3.0 | 2.5 | 2.1 | 1.5 |
| BAL | 0.2 | 0.2 | -0.2 | -1.2 | -1.5 | -1.6 | -1.4 | -1.9 | **-2.7** | -2.4 | -1.8 | -0.6 | 1.5 | 2.8 | 3.6 | 4.0 | 3.5 | 3.2 | 3.3 | 4.1 | 4.5 | 4.7 | 4.6 | 3.7 | 2.8 | 2.6 | 2.3 | 2.0 | 2.3 | 2.0 | 2.0 | 2.3 |
| CAN | -0.2 | -0.6 | -1.1 | -2.0 | -2.1 | -2.7 | **-2.8** | -2.5 | -2.4 | -1.8 | -1.0 | -0.2 | 0.1 | 0.5 | 1.1 | 1.5 | 2.5 | 3.1 | 3.2 | 3.3 | 3.2 | 3.4 | 3.6 | 3.5 | 2.9 | 2.8 | 2.5 | 2.4 | 2.5 | 2.4 | 2.3 | 2.4 |
| CBR | -1.8 | -2.5 | -2.9 | -3.0 | -2.3 | -2.2 | -2.4 | -3.3 | -4.2 | **-4.4** | -3.7 | -2.3 | -0.4 | 1.2 | 2.0 | 2.6 | 2.9 | 2.6 | 2.1 | 2.0 | 2.0 | 2.2 | 3.0 | 3.2 | 3.3 | 3.4 | 3.4 | 3.4 | 3.7 | 3.7 | 3.3 | 2.7 |
| CYL | 0.1 | -0.3 | -0.8 | -1.7 | -2.7 | -3.6 | -4.0 | **-4.4** | -3.7 | -2.9 | -2.2 | -1.2 | -0.8 | -0.2 | 0.6 | 1.2 | 1.9 | 2.5 | 2.7 | 3.0 | 3.4 | 3.2 | 3.1 | 2.7 | 1.9 | 1.6 | 1.5 | 1.9 | 2.5 | 2.7 | 2.6 | 2.1 |
| CLM | -0.7 | -1.3 | -2.3 | -3.4 | -4.5 | -5.2 | **-5.2** | -5.0 | -2.7 | -1.0 | 0.3 | 0.7 | -1.5 | -2.0 | -1.7 | -0.4 | 2.2 | 3.9 | 4.3 | 4.7 | 4.5 | 4.3 | 4.4 | 3.6 | 2.7 | 2.2 | 1.9 | 2.7 | 2.9 | 2.9 | 3.0 | 2.5 |
| CAT | -0.7 | -1.9 | -2.5 | -2.9 | -2.7 | -2.8 | -3.0 | **-3.4** | -2.9 | -1.9 | -1.2 | 0.1 | 1.0 | 1.4 | 2.2 | 2.6 | 3.4 | 4.0 | 4.5 | 4.9 | 4.1 | 3.8 | 3.3 | 2.8 | 3.2 | 3.4 | 3.1 | 3.3 | 2.7 | 2.2 | 2.0 | 2.1 |
| CVA | -1.0 | -1.7 | -2.2 | -2.9 | -3.4 | -3.8 | **-4.2** | -4.0 | -3.1 | -2.1 | -1.0 | 0.4 | 1.2 | 1.9 | 2.6 | 2.8 | 3.2 | 3.5 | 3.6 | 3.6 | 3.1 | 2.8 | 2.8 | 2.5 | 2.9 | 3.2 | 3.2 | 3.1 | 2.5 | 2.1 | 1.9 | 1.9 |
| EXT | -0.5 | -1.3 | -1.9 | -2.8 | -3.3 | **-3.7** | -3.5 | -3.2 | -2.1 | -1.3 | -0.8 | 0.1 | -0.8 | -0.4 | 0.1 | 0.6 | 2.6 | 3.2 | 3.2 | 3.0 | 2.1 | 1.6 | 1.6 | 1.6 | 1.7 | 2.2 | 2.2 | 2.3 | 2.2 | 2.0 | 2.0 | 1.8 |
| GAL | -1.1 | -2.0 | -2.6 | -2.8 | -2.7 | **-2.9** | -2.7 | -2.7 | -2.4 | -1.8 | -1.4 | -0.8 | -0.4 | 0.1 | 1.0 | 1.8 | 3.5 | 4.4 | 4.6 | 4.5 | 3.5 | 3.1 | 2.9 | 2.8 | 3.0 | 3.2 | 3.2 | 3.2 | 3.2 | 3.0 | 2.7 | 1.9 |
| MAD | 1.1 | 0.7 | 0.6 | 0.1 | -0.7 | -1.3 | -1.9 | **-2.7** | -2.7 | -2.0 | -1.7 | -0.4 | 0.6 | 1.0 | 1.9 | 2.3 | 3.0 | 3.7 | 4.3 | 4.6 | 3.9 | 3.5 | 3.0 | 2.5 | 2.9 | 3.3 | 3.3 | 3.8 | 3.8 | 3.7 | 3.7 | 3.5 |
| MUR | -0.4 | -1.2 | -1.8 | -2.3 | -2.7 | -2.9 | -3.0 | **-3.2** | -2.6 | -2.0 | -1.1 | -0.1 | 0.6 | 1.7 | 2.5 | 3.9 | 6.0 | 6.8 | 7.1 | 6.7 | 5.0 | 4.3 | 4.1 | 3.7 | 3.5 | 3.4 | 3.1 | 2.6 | 1.9 | 1.5 | 1.3 | 1.2 |
| NAV | 0.9 | 0.5 | -0.1 | -1.2 | -2.7 | -3.4 | **-3.7** | -3.5 | -2.4 | -1.5 | -0.7 | 0.4 | 1.4 | 2.1 | 2.7 | 2.9 | 2.7 | 2.8 | 2.8 | 3.1 | 3.1 | 3.1 | 3.0 | 2.9 | 2.7 | 2.7 | 2.9 | 3.0 | 3.2 | 3.3 | 3.0 | 2.5 |
| PVA | 0.1 | -0.7 | -1.2 | -1.4 | -1.2 | -1.4 | -1.7 | -2.5 | **-3.0** | -2.8 | -2.3 | -1.0 | 0.7 | 1.7 | 2.5 | 3.0 | 3.3 | 3.5 | 3.6 | 3.7 | 3.3 | 3.1 | 2.9 | 2.8 | 3.0 | 3.2 | 3.1 | 3.1 | 2.7 | 2.4 | 2.1 | 1.6 |
| RIO | -1.0 | -1.7 | -2.3 | -3.0 | -3.2 | -3.4 | -3.8 | **-4.4** | -4.1 | -3.6 | -3.2 | -1.5 | -0.8 | 0.2 | 1.4 | 1.9 | 2.9 | 3.3 | 3.5 | 3.2 | 2.9 | 2.7 | 2.4 | 2.3 | 1.7 | 1.5 | 1.4 | 1.4 | 1.7 | 1.7 | 1.5 | 1.5 |
| CEU | 1.2 | 0.5 | 0.3 | -1.1 | -1.7 | -1.6 | **-2.3** | -1.7 | -0.1 | 0.6 | 0.6 | 0.2 | -1.3 | -1.1 | 0.1 | 1.0 | 2.2 | 2.6 | 2.9 | 3.2 | 2.8 | 2.1 | 1.8 | 1.4 | 1.5 | 1.9 | 1.5 | 1.5 | 1.1 | 1.4 | 1.4 | 2.2 |
| MEL | 0.4 | 1.4 | 0.2 | 0.3 | -0.8 | -1.9 | -1.7 | **-2.9** | -1.4 | 0.0 | 0.0 | 1.1 | 0.6 | 0.8 | 1.8 | 1.6 | 2.1 | 2.6 | 2.8 | 3.4 | 2.7 | 2.1 | 2.8 | 2.0 | 1.6 | 1.9 | 1.3 | 2.5 | 1.4 | 1.1 | 1.3 | 2.4 |
| ESP | -0.2 | -0.8 | -1.3 | -1.8 | -2.3 | -2.8 | -3.1 | **-3.5** | -3.0 | -2.1 | -1.5 | -0.2 | 0.5 | 1.0 | 1.8 | 2.2 | 3.0 | 3.6 | 3.9 | 4.1 | 3.6 | 3.3 | 3.1 | 2.7 | 2.9 | 3.1 | 2.9 | 3.1 | 2.9 | 2.6 | 2.5 | 2.3 |

*Notes*: green cells for regional growths of 1% or more, yellow cells for negative annual growths. Red cells show the most recessionary quarter for each region. *Source*: own elaboration.

**Figure S1. Multiple regional box-plot summarizing annual growth rates for the quarters**

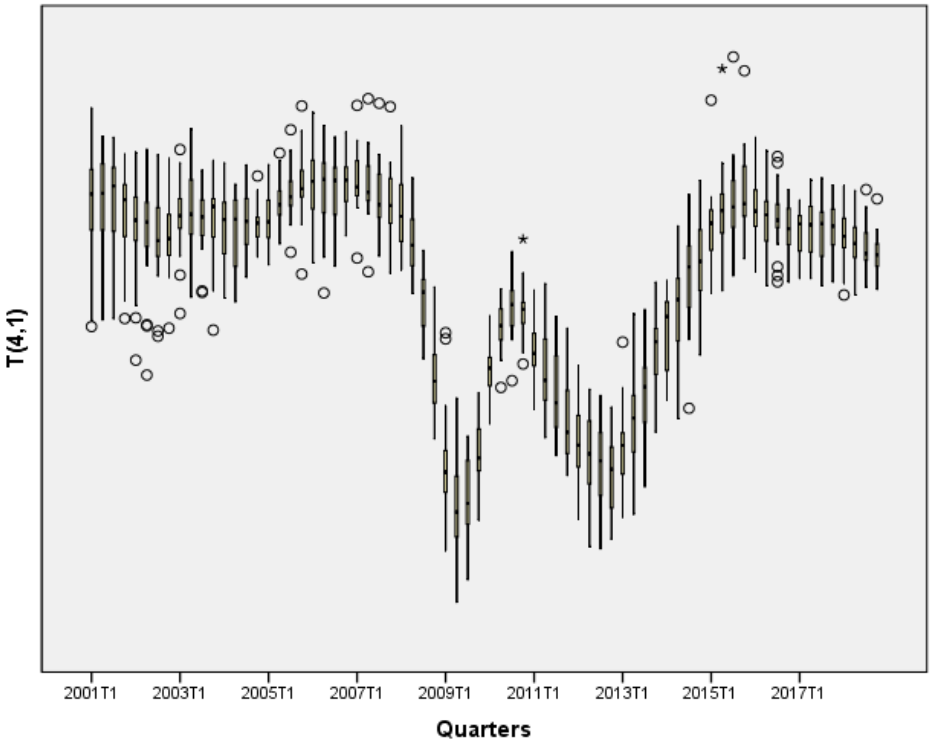
This Figure sums up the diversity in regional behaviour. Readers can see the negative asymmetry for annual rates (except Ceuta and Melilla) and the differences as regards dispersion (greater spread for the Comunidad Valenciana, Castilla La Mancha, Murcia, Rioja and Andalucía, and a lower one for Ceuta and Melilla).




*Source*: own elaboration

**Figure S2. Multiple quarterly box-plot summarizing annual growth rates for the regions**

The Figure shows quarterly box-plots by grouping the annual growth rates for the regions. A lower spread than in Figure 1 can be seen, since the intensity of the global economic cycle affects all the regions to some extent, as the box-plots show. However, the smaller the spread, the greater the number of outliers.



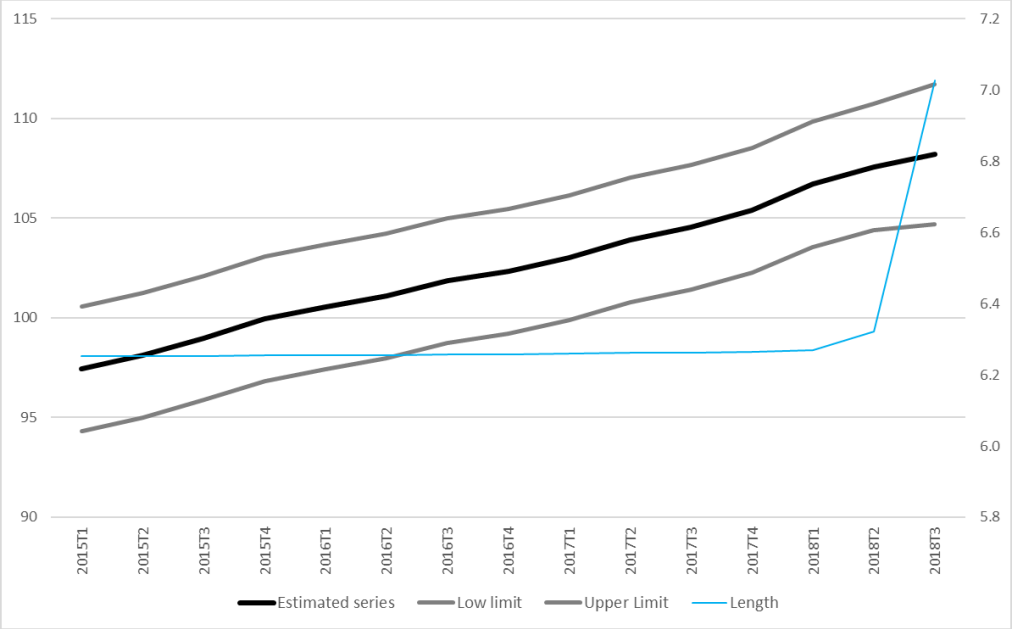

*Source*: own elaboration

**Table S5. Cyclical agreement among regions**

| | $R_X$ *ratio* | $R_Y$ *ratio* | *GMD* | $COINC_{X,Y}$ |
|---|---|---|---|---|
| (AND) | 100 | 100 | 0 | 0.94 |
| (ARA) | 100 | 70 | 0 | 0.33 |
| (AST) | 90.9 | 100 | 1 | 0.67 |
| (BAL) | 80 | 80 | 2.5 | 0.39 |
| (CAN) | 100 | 80 | 0.5 | 0.56 |
| (CBR) | 83.3 | 100 | -2 | 0.28 |
| (CYL) | 100 | 90 | 0 | 0.42 |
| (CLM) | 66.7 | 80 | 0 | 0.17 |
| (CAT) | 100 | 100 | 0 | 0.69 |
| (CVA) | 100 | 80 | 0 | 0.69 |
| (EXT) | 90.9 | 100 | 0 | 0.53 |
| (GAL) | 90.9 | 100 | 0 | 0.58 |
| (MAD) | 100 | 80 | 0 | 0.69 |
| (MUR) | 72.7 | 80 | 0.5 | 0.47 |
| (NAV) | 71.4 | 100 | -1 | 0.53 |
| (PVA) | 100 | 80 | 0 | 0.75 |
| (RIO) | 83.3 | 100 | 0 | 0.58 |
| (CEU) | 62.5 | 100 | 1 | 0.44 |
| (MEL) | 90 | 90 | 1 | 0.33 |

Source: own elaboration

**Figure S3. Bayesian confidence bands for the chain volume series for incomplete years (Andalucía)**




*Notes*: the blue curve shows the length of the interval (right axis).
*Source:* own elaboration.

**Table S6. Bayesian confidence bands for the chain volume series for incomplete years (Andalucía)**

| | 2015T1 | 2015T2 | 2015T3 | 2015T4 | 2016T1 | 2016T2 | 2016T3 | 2016T4 | 2017T1 | 2017T2 | 2017T3 | 2017T4 | 2018T1 | 2018T2 | 2018T3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Est. series** | 97.43 | 98.14 | 99.00 | 99.93 | 100.55 | 101.10 | 101.88 | 102.34 | 103.01 | 103.91 | 104.54 | 105.39 | 106.70 | 107.56 | 108.22 |
| **Low limit** | 94.31 | 95.01 | 95.87 | 96.81 | 97.42 | 97.97 | 98.75 | 99.21 | 99.88 | 100.78 | 101.41 | 102.26 | 103.57 | 104.40 | 104.71 |
| **Upper limit** | 100.56 | 101.26 | 102.12 | 103.06 | 103.67 | 104.23 | 105.01 | 105.47 | 106.14 | 107.04 | 107.67 | 108.52 | 109.84 | 110.73 | 111.74 |
| **Length** | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 7.0 |

*Source*: own elaboration