



Deseasonalised data

The dissemination of the following deseasonalisation series of the Economically Active Population Survey (adjusted for seasonal and calendar effects), from the 1st quarter of 1990, took place in 2013:

- Total number of Employed persons
- Total number of Unemployed persons

Said series have been obtained in accordance with the INE standard for adjusting seasonal and calendar effects in short-term series, available from INEbase (http://www.ine.es/ss/Satellite?L=en_GB&c=Page&cid=1254735839296&p=1254735839296&pagename=MetodologiaYEstadares%2FINELayout).

Deseasonalisation has also been carried out using Reg-ARIMA. Identification of each model has been performed manually, following the Box-Jenkins methodology, and mainly using Gretl software, with the series information at the end of 2012 (4th quarter). The selected models were as follows:

- For the Total number of Employed persons: ARIMA(1,1,0)x(0,1,1), with the series in logarithms.
- For the Total number of Unemployed persons: ARIMA(1,1,0)x(0,1,1), with the series in levels.

In both cases, four calendar effect regressors were initially introduced into the model⁽¹⁾ (working days, Easter break, Easter week working days and leap year), although in the end none of them had any significant effect, therefore they were removed and are not shown in the final model.

With regard to the analysis of atypical data, the following interventions have been incorporated into the models:

- For the Total number of Employed persons: three negative knock-on effects, in the periods 1-2009, 4-2008 and 1-1993, and a positive boost in the period 2-2011.
- For the Total number of Unemployed persons: a negative knock-on effect in the period 1-2001, which models the change in definition of unemployment that occurred in the Survey in said period, initially incorporated as a regressor together with calendar effect variables; additionally, two positive knock-on effects in the periods 1-2009 and 4-2008 and a negative effect boost in the period 2-2011.

Estimation of the model, breakdown of the series and its deseasonalisation have been performed automatically via the Tramo-Seats Plus program.

These models will also be used for deseasonalisation of the series obtained in quarters 4 of 2013. Following the end of 2013, models will be re-identified, and these will be those used for deseasonalisation in the four quarters of 2014. On the other hand, estimation of parameters of the model will be carried out each quarter for the complete series.

⁽¹⁾ Since 1990 official calendars for all Autonomous Communities have been published in the BOE, this being the reason why said date was taken as the start of the series for deseasonalisation



**SEASONALLY ADJUSTED SERIES
QUARTER-ON-QUARTER VARIATION RATES (PERCENTAGES)**

PERIOD	EMPLOYMENT	UNEMPLOYMENT	PERIOD	EMPLOYMENT	UNEMPLOYMENT
Q1-1990			Q1-2002	0.43	6.99
Q2-1990	0.20	-0.82	Q2-2002	0.92	2.62
Q3-1990	0.40	-1.74	Q3-2002	0.69	3.56
Q4-1990	0.57	-0.45	Q4-2002	0.84	0.27
Q1-1991	0.29	-0.24	Q1-2003	1.11	1.28
Q2-1991	-0.06	1.09	Q2-2003	1.17	-0.74
Q3-1991	-0.16	3.88	Q3-2003	0.97	1.54
Q4-1991	-0.23	1.31	Q4-2003	1.03	-0.34
Q1-1992	-0.40	2.12	Q1-2004	0.75	-0.92
Q2-1992	-0.61	4.59	Q2-2004	0.83	0.90
Q3-1992	-0.74	4.00	Q3-2004	1.19	-1.06
Q4-1992	-1.33	7.59	Q4-2004	1.32	-3.22
Q1-1993	-1.86	7.36	Q1-2005	1.62	-5.57
Q2-1993	-0.58	4.93	Q2-2005	1.50	-3.70
Q3-1993	-0.55	4.45	Q3-2005	1.29	-6.71
Q4-1993	-0.32	2.82	Q4-2005	1.08	0.75
Q1-1994	-0.52	2.45	Q1-2006	0.95	1.17
Q2-1994	0.26	0.83	Q2-2006	0.84	-1.01
Q3-1994	0.27	-1.42	Q3-2006	0.75	-0.81
Q4-1994	0.61	-0.82	Q4-2006	0.97	-0.75
Q1-1995	1.03	-2.01	Q1-2007	0.85	-1.84
Q2-1995	0.59	-1.52	Q2-2007	0.82	-1.04
Q3-1995	0.41	0.35	Q3-2007	0.39	5.30
Q4-1995	0.49	-0.74	Q4-2007	0.28	4.49
Q1-1996	0.64	0.48	Q1-2008	0.19	8.11
Q2-1996	0.82	-0.78	Q2-2008	-0.54	13.30
Q3-1996	1.24	-1.35	Q3-2008	-0.79	12.50
Q4-1996	0.99	-1.48	Q4-2008	-1.95	20.70
Q1-1997	0.82	-1.12	Q1-2009	-3.22	21.44
Q2-1997	0.72	-0.68	Q2-2009	-1.45	5.20
Q3-1997	0.83	-2.04	Q3-2009	-0.89	2.24
Q4-1997	1.20	-1.94	Q4-2009	-0.68	3.33
Q1-1998	1.03	-3.01	Q1-2010	-0.58	3.49
Q2-1998	0.88	-1.23	Q2-2010	-0.36	2.73
Q3-1998	1.31	-2.23	Q3-2010	-0.19	0.89
Q4-1998	1.10	-3.32	Q4-2010	-0.14	1.12
Q1-1999	1.72	-6.08	Q1-2011	-0.54	1.47
Q2-1999	1.56	-4.95	Q2-2011	-0.13	0.87
Q3-1999	1.19	-1.87	Q3-2011	-1.40	5.08
Q4-1999	1.33	-1.23	Q4-2011	-1.19	4.24
Q1-2000	1.42	-2.12	Q1-2012	-1.19	3.97
Q2-2000	1.51	-2.67	Q2-2012	-1.19	3.70
Q3-2000	1.23	-1.55	Q3-2012	-1.18	3.06
Q4-2000	1.17	-2.06	Q4-2012	-1.27	1.69
Q1-2001	0.98	-21.89	Q1-2013	-0.94	1.18
Q2-2001	0.68	0.34	Q2-2013	-0.31	-0.82
Q3-2001	1.01	-0.32	Q3-2013	-0.42	0.21
Q4-2001	0.82	2.37			