

The Difference, System and ‘Double-D’ GMM Panel Estimators in the Presence of Structural Breaks

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21 June 2012

DATA APPENDIX.

Balance sheet items are measured at the end of the December quarter each year and from the Federal Reserve Bank of Chicago (www.chicagofed.org). The data were downloaded between 25th October 2009 and 10th November 2009. Total loans (mnemonic Rcf1400) are defined as the aggregate gross book value of total loans (before deduction of valuation reserves) including (i) acceptances of other banks and commercial paper purchased in open market, (ii) acceptances executed by or account of reporting bank and subsequently acquired by it through purchases or discount, (iii) customer’s liability to reporting bank on drafts paid under letter of credit for which bank has not been reimbursed, and (iv) all advances. The data are in natural logarithms. All data and the Stata ‘do files’ are available at www.billrussell.info.

The Bai and Perron (2003) approach minimises the sum of the squared residuals to identify the number and dates of k breaks in the model: $\Delta l_t = \gamma_{k+1} + \tau_t$ where Δl_t is the annual change in the natural logarithm of total loans, γ_{k+1} is a series of $k+1$ constants that estimate the mean growth of loans in each of $k+1$ ‘regimes’ where the mean is constant in a statistical sense and τ_t is a random error. The model is estimated with a minimum regime size (or ‘trimming’) of 5 years out of a total sample of 15 years. The final model is chosen using the Bayesian Information Criterion. The model is estimated for the period 1993 to 2007. The results of the estimated model are reported in the table below. The Bai-Perron technique was estimated using Rats 7.2 using `baiperron.src` and `multiplebreaks.src` written by Tom Doan and kindly made available on the Estima internet site.

<i>Regime</i>	<i>Dates of the ‘Regimes’</i>	<i>Mean Growth Rate of Loans</i>
1	1993 - 1997	0.0996
2	1998 - 2002	0.0858
3	2003 - 2007	0.0761