Lecture plan for the I(2) course

Faculty: Søren Johansen (SJ)
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	Monday 23 May	Tuesday 24 May	Wednesday 25 May
09.00-10.30	Introduction and motivation for I(2) (KJ)	Nominal-to-real transformation (HCK)	Rank determination (HBN)
10.30-11.00	Coffee break	Coffee break	Coffee break
11.00-12.30	Structuring the I(2) model (SJ)	Deterministic components in the I(2) model (AR)	Estimation and testing hypotheses (SJ)
12.30-14.00	Lunch	Lunch	Lunch
14.00-17.00	Exercises (ANJ)	Exercises (ANJ)	Exercises (ANJ)

Basic requirements: This mini course can be seen as a continuation of the theory and applications of cointegrated VAR model for I(1) data, for example as discussed in Juselius (2007). There will no time for a repetition of the I(1) theory which therefore is assumed known to the participants.

References:

As a starting point, participants will benefit from reading Chapters 16-18 in Juselius, K. (2006) "The Cointegrated VAR Model: Methodology and Applications, Oxford University Press, Oxford. These chapters give a fairly non-technical introduction to the I(2) model and explain how to estimate and test hypotheses in this model.

The following papers discuss theoretical aspects of the I(2) model mostly with an empirical application:

Johansen, S. (1995), A Statistical Analysis of Cointegration for I(2) Variables. Econometric Theory 11, 25-59.

Johansen, S. (1997), Likelihood Analysis of the I(2) Model. Scandinavian Journal of Statistics 24, 433-462. (Reprinted in P. Newbold and S. J. Leyborne, eds. Recent Developments in Time Series Analysis, Vol I, 243-272, Edward Elgar, 2003.)

Rahbek, A., H.C. Kongsted and C. Jørgensen, (1999) "Trend Stationarity in the I(2) Cointegration Model", *Journal of Econometrics, Volume* 90, 265-289.

Paruolo, P. and A. Rahbek (1999), "Weak Exogeneity in I(2) VAR systems" , ***Journal of Econometrics***, *93:281-308*

Kongsted, H.C. (2005), "Testing the Nominal-to-Real Transformation", *Journal of Econometrics*, Volume 124, 205-225.
Johansen, S. (2006), Statistical analysis of hypotheses on the cointegrating relations in the I(2) model, Journal of Econometrics 132, 81—115.

Lütkepohl, H. and S. Johansen (2005), " A note on testing restrictions for the cointegration parameters of a VAR with I(2) variables", Econometric Theory 21, 653—658.

Rahbek, A. and H. B. Nielsen (2007) "Likelihood Ratio Testing for Cointegration Ranks in I(2) Models" *Econometric Theory, 23:615-637,*

Johansen, S. , K. Juselius, R. Frydman, and M. Goldberg and (2010), Testing hypotheses in an I(2) model with applications to the persistent long swings in the Dmk/$ rate", Journal of Econometrics 158, 117--129.

The following papers give various illustrations of the I(2) model:

Nielsen, H.B. (2002), "An I(2) Cointegration Analysis of Price and Quantity Formation in Danish Manufactured Exports", *Oxford Bulletin of Economics and Statistics,* 64(5), 2002, 449-472.

Kongsted, H.C. (2003) "An I(2) cointegration analysis of small-country import price determination," Econometrics Journal, Vol. 6, pp. 53-71.

Kongsted, H.C. and Nielsen, H.B. (2004), "Analyzing I(2) Systems by Transformed Vector Autoregressions", *Oxford Bulletin of Economics and Statistics*, 66(3), 379-397.

Bowdler, C. and Nielsen, H.B. (2006), "Inflation Adjustment in the Open Economy: An I(2) Analysis of UK Prices", *Empirical Economics*, 31(3), 569-586.