



**SERIES OF PRESENTATIONS OF
PROF. M. HASHEM PESARAN
(Cambridge University and USC)
WITHIN THE
ECONOMETRIC RESEARCH SEMINAR**

- **HS II (lecture room II, groundfloor)
Institut für Höhere Studien
Stumpergasse 56, 1060 Wien**

May 14, 2009, 11 am:

“Large Panels with Spatial Correlation and Common Factors”

with Elisa Tosetti (Cambridge University).

May 15, 2009, 11 am:

“Infinite-Dimensional VARs and Factor Models”

with Alexander Chudik (Cambridge University and European Central Bank).

May 15, 2009, 2 pm:

***“Identification of New Keynesian Phillips Curves from a
Global Perspective”***

with Stephane Dees (European Central Bank), L. Vanessa Smith (CFAP, Cambridge University) and Ron P. Smith (Birkbeck, University of London).



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- May 14, 2009, 11 am
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M. Hashem Pesaran,
Cambridge University and USC:

“Large Panels with Spatial Correlation and Common Factors”

This paper considers estimation of slope coefficients in large panel data models where even after conditioning on common observed effects the cross section units might remain dependently distributed. This could arise when the cross section units are subject to unobserved common effects and/or if there are spill over effects due to spatial or other forms of local dependencies. Initially it focuses on a regression model where the idiosyncratic errors are spatially dependent and possibly serially correlated, and derives the asymptotic distributions of the (generalized) fixed effects and the mean group estimators under homogeneous and heterogeneous slope coefficients. Semi-parametric and non-parametric estimation of the variances of these estimators is considered. The paper then focuses on a panel data model with a multifactor error structure and spatial correlation. It is established that, under this framework, the Common Correlated Effects (CCE) estimator, recently advanced by Pesaran (2006), continues to provide estimates of the slope coefficient that are consistent and asymptotically normal. Small sample properties of the CCE estimator under various patterns of cross section dependence, including spatial forms, are investigated by Monte Carlo experiments. Results show that the CCE approach works well in the presence of weak and/or strong cross sectionally correlated errors.

with Elisa Tosetti (Cambridge University).



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M. Hashem Pesaran,
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“Infinite-Dimensional VARs and Factor Models”

This paper introduces a novel approach for dealing with the ‘curse of dimensionality’ in the case of large linear dynamic systems. Restrictions on the coefficients of an unrestricted VAR are proposed that are binding only in a limit as the number of endogenous variables tends to infinity. It is shown that under such restrictions, an infinite-dimensional VAR (or IVAR) can be arbitrarily well characterized by a large number of finite-dimensional models in the spirit of the global VAR model proposed in Pesaran *et al.* (JBES, 2004). The paper also considers IVAR models with dominant individual units and shows that this will lead to a dynamic factor model with the dominant unit acting as the factor. The problems of estimation and inference in a stationary IVAR with unknown number of unobserved common factors are also investigated. A cross section augmented least squares estimator is proposed and its asymptotic distribution is derived. Satisfactory small sample properties are documented by Monte Carlo experiments.

with Alexander Chudik (Cambridge University and European Central Bank).



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M. Hashem Pesaran,
Cambridge University and USC:

“Identification of New Keynesian Phillips Curves from a Global Perspective”

This paper is concerned with the estimation of New Keynesian Phillips Curves (NKPC) and focuses on two issues: the weak instrument problem and the characterisation of the steady states. It proposes some solutions from a global perspective. Using a global vector autoregressive model (GVAR) steady states are estimated as long-horizon expectations and valid instruments are constructed from the global variables as weighted averages. The proposed estimation strategy is illustrated using estimates of the NKPC for 8 developed industrial countries. The GVAR generates global factors that are valid instruments and help alleviate the weak instrument problem. The steady states also reflect global influences and any long-run theoretical relationships that might prevail within and across countries in the global economy. The GVAR measure of the steady state performed better than the HP measure, and the use of foreign instruments substantially increased the precision of the estimates of the output coefficient.

with Stephane Dees (European Central Bank), L. Vanessa Smith (CFAP, Cambridge University) and Ron P. Smith (Birkbeck, University of London).