The Econometric Analysis of Recurrent Events in Economics and Finance

Wednesday 11 June

08:30-09:00 registration
09:00-10:15 Lecture: Overview
10:15- 10:45 coffee break
10:45-12:00 Lecture: Prescribed Rules for Recurrent Events in Univariate Series - Oscillations, Fluctuations, and Cycles
12:00-13:30 lunch
13:30-14:30 Lecture : Continuation of pre-lunch Lecture
14:30-15:00 coffee break
15:00-17:00 Lecture : Prescribed Rules for Describing Recurrent Events with Multivariate Series

Thursday 12 June

09:00-10:15 *Lecture*: Model Based Rules for Describing Recurrent Events
10:15- 10:45 coffee break
10:45-12:00 Lecture: Measuring Cycle Features
12:00-13:30 lunch
13:30-14:30 *Lecture*: Predicting Recurrent Events
14:30-15:00 coffee break
15:00-17:*00* *Lecture*: Accounting for Observed Recurrent Events with a Range of Statistical Models

The course will look at the description of recurrent events and the use of this information for prediction and analysis of econometric models. Recurrent events come in many forms ranging from business and financial cycles to crises. At the most basic level recurrent events are summarized by binary indicators, although there can be higher order extensions involving multiple categorical variables. Because the indicators are constructed either directly from data or indirectly by models such as Markov Switching that use data, they have different properties to those arising in micro-econometrics, and so how one uses them depends a lot upon the method of construction. In the event model-based methods are used it is crucial to check the properties of the model used. The course looks at both analytical and descriptive work on all of these topics.

The course will look at many papers. Lecture notes will be made available. Some cover our own work and the three primary ones would be

Harding, D., and A.R. Pagan, (2002), "Dissecting the Cycle: A Methodological Investigation", *Journal of Monetary Economics*, 49(2):365-381.

D. Harding and A. R. Pagan “Synchronization of Cycles”, *Journal of Econometrics*, 132, 59-79

Harding, D. and A.R. Pagan, (2011) "An Econometric Analysis of Some Models of Constructed Binary Random Variables", *Journal of Business and Economic Statistics*, 29,86-95.

Other approaches are

Chauvet, M. and J. Piger (2008) "A Comparison of the Real-Time Performance of Business Cycle Dating Methods," Journal of Business and Economic Statistics, 26, 42-49

Dueker, M. (2005), "Dynamic Forecasts of Qualitative Variables: A Qual VAR Model of U.S. Recessions", *Journal of Business and Economic Statistics*, 23, 96-104.

Hamilton, J.D., 1989, "A New Approach to the Economic Analysis of Non Stationary Time Series and the Business Cycle, *Econometrica*, 57, pp 357-84.

Maheu, J. and T. McCurdy (2000), "Identifying Bull and Bear Markets", *Journal of Business and Economic Statistics*, 18, 100-112

Marcellino, M.G., M.J. Artis and T. Proietti, (2004), "Dating the Euro Area Business Cycle: A Methodological Contribution with an Application to the Euro Area", *Oxford Bulletin of Economics and Statistics*, 66, 537-565.

Morley,J. J. Piger, and P-L Tien (2013), "Reproducing Business Cycle Features: How Important Is Nonlinearity Versus Multivariate Information?", *Studies in Non-linear Dynamics and Econometrics,* 17, 483-498

Stock, J.H. and M.W. Watson, (2014) ,"Estimating Turning Points Using Large Data Sets" , *Journal of Econometrics*, 368-381.

There have been many suggested extensions to the above

Filardo, A. J. (1994), "Business Cycle Phases and Their Transitional Dynamics", *Journal of Business and Economic Statistics*, 12, 299-308.

Liu, Z., D.F. Waggoner and T. Zha (2011), "Sources of Macroeconomic Fluctuations: A Regime-Switching DSGE Approach", *Quantitative Economics*, 2, 251-301

Other papers that will be analysed in the course

Artis, M.J., Z.G., Kontolemis and D.R. Osborn (1997), "Business Cycles for G7 and European Countries". *Journal of Business*, 70, 249-279.

Billio, M. R. Casarina, F. Ravazzolo and H. K. van Dijk (2012), "Combination schemes for turning point predictions" *The Quarterly Review of Economics and Finance* 52 (2012) 402—412

Bluedorn, J.C., J. Decressin and M. Terrones (2013), "Do Asset Price Drops Foreshadow Recessions", *IMF Working Paper*, 13/203

Camacho, M, G. Perez-Quiros and L. Saiz (2008), "Do European Business Cycles Look Alike?", *Journal of Economic Dynamics and Control*, 32, 2165-2190

Candelon, B. J. Piplack and S. Straetmans (2009) " Multivariate Business Cycle Synchronization in Small Samples", *Oxford Bulletin of Economics and Statistics*, 71, 715-737

Claessens, S, M.A. Kose and M. E. Terrones (2012), "How do Business and Financial Cycles Interact?", *Journal of International Economics*, 87, 178-190.

Y. Eo and C-J Kim (2012), " Markov-Switching with Evolving Regime-Specific Parameters: are Post-War Booms or Recessions all Alike". *Economics Working Paper 2012-4*, University of Sydney

Kaufmann, S. (2010), "Dating and Forecasting Turning Points by Bayesian Clustering with Dynamic Structure: A Suggestion with an Application to Austrian Data", *Journal of Applied Econometrics*, 23, 309-344.

Kauppi, H. and P. Saikkonen (2008), "Predicting U.S. Recessions with Dynamic Binary Response Models", *Review of Economics and Statistics*, 90, 777-791.

Krolzig, H.-M. and Toro, J. (2004). `Classical and Modern Business Cycle Measurement: The European Case', *Spanish Economic Review*, 1-21

Ng, S. (2013) "Boosting Recessions ", Department of Economics, Columbia University August 2013

Ohn, J. L.W. Taylor and A. Pagan (2004)"Testing for Duration Dependence in Economic Cycles*", Econometrics Journal,* 7, 528-549

Otrok, C., and C. H. Whiteman (1998) "Bayesian Leading Indicators: Measuring and Predicting Economic Conditions in Iowa", *International Economic Review*, 39(4), 997-1014.

Pagan, A.R. and K. Sossounov (2003), "A Simple Framework for Analyzing Bull and Bear Markets", *Journal of Applied Econometrics*, 18, 23-46.

Sichel, D. (1991), "Business Cycle Duration Dependence: A Parametric Approach," *The Review of Economics and Statistics*, 73, 254-60.