MONASH University

XIAMEN University

Joint Workshop on

Economics
Econometrics
Statistics

Dec 11 – 12, 2015
H125, Building H
Monash University
900 Dandenong Road
Caulfield East, VIC 3145
Workshop Program

- **Time:** The 11th and 12th of December, 2015

- **Venue:** Room H1.25, Building H, Caulfield East, Monash University

**Program on 11 December, 2015**

- 8:30 – 8:45: Registration

- 8:45 – 9:00: Opening Session
  - Chair: Farshid Vahid, Head of the Department of Econometrics and Business Statistics, Monash University
  - Speaker: Professor Colm Kearney, Dean of the Faculty of Business and Economics, Monash University

- 9:00 – 10:30: Keynote Session 1
  - Chair: Maxwell King, Monash University
  
    * 9:00 – 9:25
      Speaker: Yongmiao Hong, Cornell University
      Title: Selection of an Optimal Rolling Window Length in Time-Varying Predictive Regression
    
    * 9:30 – 9:55
      Speaker: Heather Anderson, Monash University
      Title: Forecast Averaging when Model Structure is Uncertain
    
    * 10:00 - 10:25
      Speaker: Rob Hyndman, Monash University
      Title: Exploring the Feature Space of Large Collections of Time Series

- 10:30 - 11:00: Morning tea break

- 11:00 - 12:40: Invited Session 1
  - Chair: Param Silvapulle, Monash University
    
    * 11:00 – 11:20
      Speaker: Haiqiang Chen, Xiamen University
      Title: A New Estimator for Integrated Volatility with Micro-Structure Noise and Jumps
* 11:25 – 11:45
Speaker: Bonsoo Koo, Monash University
Title: How Trade Matching Forms in the Credit Default Swap Market

* 11:50 – 12:10
Speaker: Lina Meng, Xiamen University
Title: Sprawl Globally? Evidences from the Space

* 12:15 – 12:35
Speaker: Mervyn Silvapulle, Monash University
Title: Goodness-of-fit Tests for GARCH Models

• 12:40 - 14:00: Lunch break

• 14:00 - 15:40: Invited Session 2

  – Chair: Zhengming Qian, Xiamen University

* 14:00 – 14:20
Speaker: Yu Ren, Xiamen University
Title: Balanced Predictive Regressions

* 14:25 – 14:45
Speaker: George Athanasopoulos, Monash University
Title: Forecasting with Temporal Hierarchies

* 14:50 – 15:10
Speaker: Yingxing Li, Xiamen University
Title: A Regime Shift Model with Nonparametric Switching Mechanism

* 15:15 – 15:35
Speaker: Anastasios Panagiotelis, Monash University
Title: Macroeconomic Forecasting in Data-Rich World

• 15:40 - 16:10: Afternoon tea break

• 16:10 - 17:50: Invited Session 3

  – Chair: Ying Fang, Xiamen University

* 16:10 – 16:30
Speaker: Kai Xia, Xiamen University
Title: Heterogeneous Trending Panel Data Model with Cross-Sectional Dependence

* 16:35 – 16:55
Speaker: Yanrong Yang, Monash University
Title: Recursive Estimation in Large Panels with Cross-Sectional Dependence

* 17:00 – 17:20
Speaker: Xiaoyi Han, Xiamen University
Title: Bayesian Analysis of Spatial Panel Autoregressive Models with Time-varying Endogenous Spatial Weight Matrices, Common Factors and Random Coefficients

* 17:25 – 17:45
Speaker: Li Chen, Monash University
Title: Linear Regression for Trending Time Series with Endogeneity

• 19:00 - 22:00: Conference dinner by invitation
Program on 12 December, 2015

• 9:00 - 10:30: Keynote Session 2
  - Chair: Heather Anderson, Monash University
    * 9:00 – 9:25
      Speaker: Ying Fang, Xiamen University
      Title: Estimating the Growth Effect of FDI using a Quantile Panel Data Model with Partially Varying Coefficients
    * 9:30 – 9:55
      Speaker: Di Cook, Monash University
      Title: Lineplots or Scatterplots to Compare two Time Series
    * 10:00 – 10:25
      Speaker: Maxwell King, Monash University
      Title: Point Optimal Testing: A Survey of the Post 1987 Literature

• 10:30 - 11:00: Morning tea break

• 11:00 - 12:40: Invited Session 4
  - Chair: Ye Guo, Xiamen University
    * 11:00 – 11:20
      Speaker: Zhengming Qian, Xiamen University
      Title: The Study on Green Economic Efficiency and Environmental Regulation: Based on the Nonparametric Conditional Efficiency Model
    * 11:25 – 11:45
      Speaker: Haotian Chen, Monash University
      Title: Bayesian Estimation for Partially Linear Models with an Application to Household Gasoline Consumption
    * 11:50 – 12:10
      Speaker: Bin Jiang, Monash University
      Title: Bayesian Rank Selection in Multivariate Regressions
    * 12:15 – 12:35
      Speaker: Han Li, Monash University
      Title: A Flexible Functional Form Approach to Mortality Modelling

• 12:40 - 14:00: Lunch break

• 14:00 - 15:40: Invited Session 5
Chair: Brett Inder, Monash University

* 14:00 – 14:20
Speaker: Juan Lin, Xiamen University
Title: Copula Specification Tests under General Censorship

* 14:25 – 14:45
Speaker: Param Silvapulle, Monash University
Title: Kernel Estimation of Copula Densities and Applications

* 14:50 – 15:10
Speaker: Ye Guo, Xiamen University
Title: Monetary Policy, Unexpected Changes of Target Interest Rate and Corporate Credit Spreads in China

* 15:15 – 15:35
Speaker: Wen Chen, Xiamen University
Title: China’s Position, Trade Revenue and Competitiveness in Global Value Chains: An Analysis Based on Trade in Value Added Accounting Framework

• 15:40 - 16:10: Afternoon tea break

• 16:10 - 17:50: Invited Session 6

– Chair: Yongmiao Hong, Cornell University

* 16:10 – 16:30
Speaker: Xiaoping He, Xiamen University
Title: Coal Abundance, Economic Transformation and Long–Term Development

* 16:35 – 16:55
Speaker: Brett Inder, Monash University
Title: Data-driven Methods of Measuring Poverty and Their Implications for Development Policy in Timor-Leste.

* 17:00 – 17:20
Speaker: Qingliang Fan, Xiamen University
Title: Virtual World Versus Real World : A Study of The Demand for Cyber Games

* 17:25 – 17:45
Speaker: Chuhui Li, Monash University
Title: Partial Identification of Treatment Effect in Binary Outcome Models: A Health Economics Application

• 17:50 - 18:00: Concluding Session
- Chair: Jiti Gao, Monash University
- Speaker: Yongmiao Hong, Cornell University

- 19:00 - 22:00: Conference dinner by invitation
Abstract

Presentation on 11 December, 2015

• 9:00 – 9:25

Speaker: Yongmiao Hong, Cornell University
Title: Selection of an Optimal Rolling Window Length in Time–Varying Predictive Regression

Abstract: Out-of-sample forecast is often sensitive to the length of the estimation sample, since good forecasting performance in one period may be unrelated to whether it is a good predictor in a later period. Little attention has been paid to theoretical guidance on choosing an optimal window length of the estimation sample. Since structural changes are not uncommon in economic and financial time series, data in the previous time period may be irrelevant to the present data-generating process. Assuming that a predictive linear regression model has smooth time-varying parameters, we propose a novel approach to selecting the optimal window length for the estimation sample by minimizing suitable forecast criteria, including mean square forecast errors, conditional mean square forecast errors and global square forecast errors, respectively. We develop a practically feasible cross-validation method to choose the optimal window length, which is asymptotically equivalent to the method based on the unconditional mean square forecast errors. Simulation studies are conducted to assess the property of forecasts based on our methods under various types of structure changes, and we highlight the merits of the proposed methods relative to various existing methods in the literature. When applied to forecast the U.S. real GDP growth rate, inflation rate and stock return, our proposed cross-validation significantly improves upon conventional methods.

• 9:30 – 9:55

Speaker: Heather Anderson, Monash University
Title: Forecast Averaging when Model Structure is Uncertain

Abstract: This paper studies the ability of forecast combination methods to jointly deal with both model and structural break uncertainty. Our setting is one in which we have several (potential) predictors for constructing our forecast and we know that each predictor is sometimes useful, but we do not know which of these predictors will be useful for the forecast period under consideration. We find that forecast strategies that average forecasts based on models that use different estimation samples reduce out of sample root mean squared error (RMSE) more than strategies that average
forecasts from models that use different predictors, but there is little additional gain when combining forecasts that draw on both forecasting strategies.

- 10:00 - 10:25
  
  Speaker: Rob Hyndman, Monash University
  
  Title: Exploring the Feature Space of Large Collections of Time Series
  
  Abstract: It is becoming increasingly common for organizations to collect very large amounts of data over time. Data visualization is essential for exploring and understanding structures and patterns, and to identify unusual observations. However, the sheer quantity of data available challenges current time series visualisation methods.

  For example, Yahoo has banks of mail servers that are monitored over time. Many measurements on server performance are collected every hour for each of thousands of servers. We wish to identify servers that are behaving unusually.

  Alternatively, we may have thousands of time series we wish to forecast, and we want to be able to identify the types of time series that are easy to forecast and those that are inherently challenging.

  I will demonstrate an approach to this problem using a vector of features on each time series, measuring characteristics of the series. For example, the features may include lag correlation, strength of seasonality, spectral entropy, etc. Then we use a principal component decomposition on the features, and plot the first few principal components. This enables us to explore a lower dimensional space and discover interesting structure and unusual observations.

- 11:00 – 11:20
  
  Speaker: Haiqiang Chen, Xiamen University
  
  Title: A New Estimator for Integrated Volatility with Micro-Structure Noise and Jumps
  
  Abstract: This paper develops a new estimator for integrated volatility of an Itô semi-martingale in the presence of jumps and market micro-structure noise. The estimator is based on the joint using of pre-averaging multi-power variation estimation and threshold technique, severing to remove the impact from micro-structure noise and jumps respectively. Asymptotic properties of the proposed estimator, such as consistency and associated central limit theorems are provided. Monte Carlo simulations show that the estimator is robust to both Levy jumps and micro-structure noise and provides less biased estimate, compared to the extant estimators in the literature. As an application, we study the problem of volatility forecasting for U.S. stock market using the new estimator.
• 11:25 – 11:45

Speaker, Bonsoo Koo, Monash University

Title: How Trade Matching Forms in the Credit Default Swap Market

Abstract: We investigate the pairing of dealers and customers in credit default swap (CDS) transactions. Specifically, we analyse how a participant in a CDS transaction determines its trading partner in a matching game frameworks. Using comprehensive transaction reports from the Depository Trust & Clearing Corporation (DTCC), we show that the type and size of participating organisations, the degree of participation and intermediation in CDS transactions and counterparty risk are all important factors for trade matching in the UK CDS market. We find that different types of market participants have different trade matching payoffs. For example, unlike other institutions, hedge funds prefer trading with risky counterparties during some periods. This finding is significant for policy-makers because such incentives can potentially lead to contagion risk.

• 11:50 – 12:10

Speaker: Lina Meng, Xiamen University

Title: Sprawl Globally ? Evidences from the Space

Abstract: We examine the similarities and differences in urban form and growth that have occurred globally. We targets urban areas with over 100 thousand population, to cover the city size from middle to mega. Using the remote sensing and census data, 2153 urban areas thus are selected as our target areas. Three dimensions of urban structure, namely size, density and fragmentation, are measured between 2000 and 2010. We also examine different sprawl patterns across 2153 urban areas from different levels of economic development.

• 12:15 – 12:35

Speaker: Mervyn Silvapulle, Monash University

Title: Goodness-of-fit Tests for GARCH Models

Abstract: Regression models with heteroscedastic errors, including the generalized autoregressive conditional heteroscedasticity [GARCH] models, are widely used in finance. For example, an AR(p) model with GARCH(p,q) error is a special case of this family of models. In this paper, we consider the scenario where a parametric form is assumed for the entire model including the error distribution, and the statistical inference requires the estimated conditional distribution of the dependent variable. For example, the objective may be to use the estimated model for forecasting the conditional distribution of the dependent variable or estimating risk measures such as Value
at Risk. As a consequence, answers to substantive questions critically depend on the assumed parametric form of the model. This paper develops a goodness-of-fit test of a regression model with GARCH type errors. The limiting distribution of the test statistic depends on unknown nuisance parameters. Therefore, a bootstrap procedure is proposed to implement the tests. The main contribution of this paper is to show that the proposed bootstrap method is valid. The tests have non-trivial asymptotic local power.

- **14:00 – 14:20**
  
  **Speaker:** Yu Ren, Xiamen University  
  **Title:** Balanced Predictive Regressions  
  **Abstract:** In the predictive regression, a relatively less persistent return series is regressed on the first lag of some highly persistent predictor. Therefore, predictability could often be missed due to the persistence imbalance. This paper aims to balance the predictive regression by augmenting the regression with an additional lag of the predictor. The addition of the second lag generally reduces the persistence level in the right-hand side of the equation, to achieve the balance. We then propose two appealing testing procedures based on least squares estimation, which are easy to implement in practice. Empirically, we re-examine the popular predictors in the literature, and find quite different results.

- **14:25 – 14:45**
  
  **Speaker:** George Athanasopoulos, Monash University  
  **Title:** Forecasting with Temporal Hierarchies  
  **Abstract:** This paper introduces the concept of Temporal Hierarchies for time series forecasting. A temporal hierarchy can be constructed for any time series by means of non-overlapping temporal aggregation. Predictions constructed at all aggregation levels are combined with the proposed framework to result in temporally reconciled, accurate and robust forecasts. The implied combination mitigates modelling uncertainty, while the reconciled nature of the forecasts results in a unified prediction that supports aligned decisions at different planning horizons: from short-term operational up to long-term strategic planning. The proposed methodology is independent of forecasting models. It can embed high level managerial forecasts that incorporate complex and unstructured information with lower level statistical forecasts. Our results show that forecasting with temporal hierarchies increases accuracy over conventional forecasting, particularly under increased modelling uncertainty. We discuss organisational implications of the temporally reconciled forecasts using a case study of Accident Emergency departments.
14:50 – 15:10
Speaker: Yingxing Li, Xiamen University
Title: A Regime Shift Model with Nonparametric Switching Mechanism
Abstract: In this paper, we propose a new class of regime shift models with flexible switching mechanism that relies on an unknown probability function of the observed threshold variables. The proposed models generally embrace traditional threshold models with contaminated threshold variables or heterogeneous threshold values, thus gaining more power in handling complicated data structure. We model the unknown probability function via splines and employ Markov Chain Monte Carlo (MCMC) methods for estimation. Bayesian tests for the existence of threshold effects are also conducted. Both simulation studies and an empirical application in predicting the U.S. stock market returns demonstrate the validity of our methods.

15:15 – 15:35
Speaker: Anastasios Panagiotelis, Monash University
Title: Macroeconomic Forecasting in Data-Rich World
Abstract: Methods for forecasting macroeconomic variables such as GDP growth and inflation rates should exploit the large number of predictors that are becoming increasingly available. One popular approach that does so is motivated by dynamic factor models, and involves using lags of a small number of principal components of all available variables as predictors. We show theoretically and empirically using simulated and real-world data that even under if the assumptions of a dynamic factor model hold, forecasts can be improved by augmenting principal components with leading indicators. To address the challenge of judiciously selecting a small number of predictors we employ existing methods of Bayesian variable selection (BVS) based on so-called g-priors and also propose our own novel fully Bayesian approach that allows the level of shrinkage to vary with model complexity. The forecasts from all these BVS methodologies are compared using both simulated and real-world data and are competitive when compared to popular benchmarks.

16:10 – 16:30
Speaker: Kai Xia, Xiamen University
Title: Heterogeneous Trending Panel Data Model with Cross-Sectional Dependence.
Abstract: This paper considers a panel data model with heterogeneous parametric vectors and trends across individuals. A semiparametric profile likelihood method is developed to estimate individual parameter vector and trending function, and then
the mean group estimators. Asymptotic distributions are established for proposed estimators under cross-sectional dependence. In particular, the mean group estimators for parametric vectors and trend functions achieve root-NT and root-NTh convergence rate respectively. For inference, under some mild conditions, consistent estimate for the variance of trending functions is available. Meanwhile, an alternative approach is applied for the inference of the parameter vectors without involving asymptotic covariance explicitly. The Monte Carlo simulations show the finite sample performance of the proposed estimate is satisfactory. In addition, the model is applied to an empirical example of OECD health expenditure data set.

• 16:35 – 16:55
  Speaker: Yanrong Yang, Monash University
  Title: Recursive Estimation in Large Panels with Cross-Sectional Dependence
  Abstract: Bai (2009) proposes an iterative least squares estimation method for the regressors in panel data models with unobservable multiple interactive effects adopting principle components approach to extracting the common factors from OLS residuals. However, the impact of iteration on the asymptotic properties of this iterative least squares estimator is not shown. This paper extends the results of Bai (2009) by formally establishing the recursive theory which can reveal the contribution of the number of iterations to the convergence rate of the estimator. Moreover, one can determine the accuracy of the estimation by choosing the maximum iteration based on our results which make the iterative least squares procedure relatively flexible in practice.

• 17:00 – 17:20
  Speaker: Xiaoyi Han, Xiamen University
  Title: Bayesian Analysis of Spatial Panel Autoregressive Models with Time-varying Endogenous Spatial Weight Matrices, Common Factors and Random Coefficients
  Abstract: This paper examines the specification and estimation of spatial panel autoregressive (SAR) models with dynamic, time-varying endogenous spatial weights matrices and common factors. Motivated by the spillover effects of state Medicaid spending on welfare programs, we combine the features of endogenous time-varying weights matrices and common factors for the first time in the SAR models. In this particular application, endogeneity of the spatial weights matrices comes from the correlation of economic distance and the disturbances in the SAR equation. Common factors are introduced to control for common shocks to all states and factor loadings may capture heterogeneity in states’ responses. For the estimation, the Bayesian MCMC method is developed. Identification of factors and factor loadings, and the
corresponding model selection issues based upon the Bayes factor and the deviance information criterion (DIC) are also explored. We find that a state’s Medicaid related spending is positively and significantly affected by the Medicaid related spending of its neighbors. Furthermore, in the context of Medicaid spending, both welfare motivated move and yardstick competition are possible sources of strategic interactions among state governments. And welfare motivated move turns out to be a more important driving force of the interdependence of state spending policy.

- 17:25 – 17:45

Speaker: Li Chen, Monash University

Title: Linear Regression for Trending Time Series with Endogeneity

Abstract: This paper studies a linear regression model for the trending time series, which contains a bounded and flexible nonlinear form of time trend that describes its nonstationary feature. We also take into account the correlation between the sequences of stationary innovations that may cause the problem of endogeneity. The control function approach is employed to decompose the endogenous correlation, thus the linear regression model is extended to a semiparametric partially linear model. Both mathematical proofs and Monte Carlo simulations show that the conventional estimators for partially linear models are still unbiased and n-consistent to normal distributions, though the usual identification conditions for the stationary cases are not satisfied. We revisit the long-run relationship between aggregate personal income and consumption as an empirical example.
Presentation on 12 December, 2015

* 9:00 – 9:25
Speaker: Ying Fang, Xiamen University
Title: Estimating the Growth Effect of FDI using a Quantile Panel Data Model with Partially Varying Coefficients
Abstract: In this paper, we estimate the impact of FDI on economic growth in host countries by proposing a new semiparametric quantile panel data model with correlated random effects, in which some of the coefficients are allowed to depend on some smooth economic variables while other coefficients remain constant. A three-stage estimation procedure based on quasi-maximum (local) likelihood estimation (QMLE) is proposed to estimate both constant and functional coefficients and their asymptotic properties are investigated. We show that the estimator of constant coefficients is $\sqrt{N}$ consistent and the estimator of varying coefficients converges in a nonparametric rate. A Monte Carlo simulation is conducted to examine the finite sample performance of the proposed estimators. Finally, using the cross-country data from 1970 to 1999, we find a strong empirical evidence of the existence of the absorptive capacity hypothesis. Moreover, another new finding is that FDI has a much stronger growth effects for countries with fast economic growth than for those with slow economic growth.

* 9:30 – 9:55
Speaker: Di Cook, Monash University
Title: Lineplots or Scatterplots to Compare two Time Series
Abstract: Economists are in love with their line plots, but if association between two series is the primary purpose, it may be that looking at the data using a scatterplot would be better. This talk describes Nathaniels honours thesis that investigated this question. A new protocol for rigorously comparing plot design for perceiving structure was used to test scatterplots versus line plots. Workers from Amazons Mechanical Turk were engaged as subjects. The results are interesting!

* 10:00 – 10:25
Speaker: Maxwell King, Monash University
Title: Point Optimal Testing: A Survey of the Post 1987 Literature
Abstract: In the absence of uniformly most powerful (UMP) tests or uniformly most powerful invariant (UMPI) tests, King (1987c) suggested the use of Point Optimal (PO) tests, which are most powerful at a chosen point under the alternative hypothesis. This paper surveys the literature and major developments on point optimal testing since
1987 and suggests some areas for future research. Topics include tests for which all nuisance parameters have been eliminated and dealing with nuisance parameters via (i) a weighted average of \( p \) values, (ii) approximate point optimal tests, (iii) plugging in estimated parameter values, (iv) using asymptotics and (v) integration. Progress on using point-optimal testing principles for two-sided testing and multidimensional alternatives is also reviewed. The paper concludes with thoughts on how best to deal with nuisance parameters under both the null and alternative hypotheses, as well as the development of a new class of point optimal tests for multi-dimensional testing.

- Chair: Ye Guo, Xiamen University

- 11:00 – 11:20

Speaker: Zhengming Qian, Xiamen University

Title: The Study on Green Economic Efficiency and Environmental Regulation: Based on the Nonparametric Conditional Efficiency Model

Abstract: This paper proposes a nonparametric conditional efficiency model with resource and environmental constraint based on SBM model, and uses the new model to test the mechanisms empirical effects of macro environmental regulation. The results suggest that with improvement of the regulation, green economic efficiency decreases firstly and then increases, proving the nonlinear relationship between environmental regulation and green economic efficiency. The empirical results also indicate that environmental regulation in east area has the same effect on its green economic efficiency, however, enhancing the regulation strength has the negative effects on the middle and west areas at this moment.

- 11:25 – 11:45

Speaker: Haotian Chen, Monash University

Title: Bayesian Estimation for Partially Linear Models with an Application to Household Gasoline Consumption

Abstract: A partially linear model is often estimated in a two-stage procedure, which involves estimating the nonlinear component conditional on initially estimated linear coefficients. We propose a sampling procedure that aims to simultaneously estimate the linear coefficients and bandwidths involved in the Nadaraya-Watson estimator of the nonlinear component. The performance of this sampling procedure is demonstrated through Monte Carlo simulation studies. The proposed sampling algorithm is applied to partially linear models of gasoline consumption based on the US household survey data. In contrary to implausible price effect reported in the literature, we find negative price effect on household gasoline consumption.
Bayesian Rank Selection in Multivariate Regressions

Abstract: Estimating the rank of the coefficient matrix is a major challenge in multivariate regressions. In this paper, we develop a novel fully Bayesian approach that allows for rank estimation. The key of this approach is reparameterizing the coefficient matrix using its singular value decomposition and conducting Bayesian inference on the decomposed parameters. By implementing the stochastic search variable selection of George and McCulloch (1993) on the singular values of the coefficient matrix, the ultimate selected rank can be identified as the number of nonzero singular values. Our approach is devised not only for small multivariate regressions in the classical literature but also for higher dimensional models with 20 to 40 predictors. In macroeconomic forecasting, the coefficient matrix of high dimensional regression models such as big VARs can be both low-rank and sparse. The proposed approach can exploit both the rank deficiency and sparsity of such coefficient matrices. We show that in both simulation and empirical studies our Bayesian approach improves one-step-ahead out-of-sample forecasts of two most promising benchmarks in the literature, dynamic factor models and factor augmented VARs.

A Flexible Functional Form Approach to Mortality Modelling

Abstract: There has been a rapid growth in life expectancy during the past twenty years, resulting in increased pressure on personal and public finances. The increasing amount of attention paid on longevity risk and funding for old has created the needs for precise mortality models and accurate future mortality forecasts. Orthogonal polynomials have been widely used in technical fields and there have also been applications to mortality modeling in one-dimensional cases (see for example Renshaw et al., 1996; Ahmadi and Li, 2014). In this paper we adopt a flexible functional form approach using two-dimensional Legendre orthogonal polynomials to fit and forecast mortality rates. Unlike the existing mortality models in the literature, the model we propose does not impose any restrictions on the age, time or cohort structure of the data and thus allows for different model designs for different countries’ mortality experience. We conduct an empirical study using male mortality data from a range of developed countries and compare our model with well known mortality models in the literature. The fitting results show that the proposed model provides comparable fitting but with a much smaller number of parameters. We also show that the proposed model works well and
produces clean residual plots without the incorporation cohort effect. Moreover, based on the 5-year-ahead forecasting results, it can be concluded that our model improves the overall accuracy of the future mortality forecast.

- 14:00 – 14:20

Speaker: Juan Lin, Xiamen University
Title: Copula Specification Tests under General Censorship
Abstract: We propose a family of data-driven tests for the goodness-of-fit of copula-based multivariate survival models under general censorship. Appealing features of the tests include flexibility, ease of implementation, distribution free asymptotic distributions and informativeness regarding alternative copulas when a null distribution is rejected. Consistency and large sample properties of the tests, with parametrically or nonparametrically estimated marginal distribution, are established. Monte Carlo simulations demonstrate good finite sample performance of the proposed tests. The semiparametric tests are shown to rival the correctly specified parametric tests and at the same time are immune from risk of misspecification. Two empirical applications illustrate the usefulness of the proposed tests.

- 14:25 – 14:45

Speaker: Param Silvapulle, Monash University
Title: Kernel Estimation of Copula Densities and Applications
Abstract: In this paper, we study the kernel estimation of the copula density on unit square \([0,1]^2\), and demonstrate the implementation of this methodology to equity and bond markets. There are two crucial problems associated with this estimator. First, the kernel estimator is biased at the boundaries. Second, the kernel estimator is sensitive to both kernel and bandwidth. To correct the boundary effects, we propose a Gaussian copula (GC) kernel and a logit transformation (LT) kernel estimators, and derive their asymptotic properties. Moreover, we introduce a Bayesian approach to bandwidth and kernel selection, and an \(L_2\)-type goodness-of-fit test. We conduct a simulation study to assess the finite sample performance of the GC and LT kernels, and two comparable kernels based on Gaussian transformation (GT) and mirror-reflection (MR), with the Bayesian and likelihood cross-validation (LCV) bandwidths. The results show that the performances of the Bayesian and LCV bandwidths are more or less the same. The performance of the kernel functions depends largely on the shapes of the underlying copula densities. The GC kernel density estimate fits the copula density of All Ords and S&P 500 returns well. The t-copula fits the copula density of sovereign bond yield spreads of Greece and Spain well.
• 14:50 – 15:10
Speaker: Ye Guo, Xiamen University
Title: Monetary Policy, Unexpected Changes of Target Interest Rate and Corporate Credit Spreads in China
Abstract: This study considers the dynamic influence of monetary policy, especially the unexpected part, on the corporate credit spreads through the interest rate mechanism, which is different from previous studies based on the stock market mechanism. The forward interest rate is constructed by the interest rate term structure theory and the target interest rate is decomposed into the expected and the unexpected parts. By distinguishing between different stages of the business cycle, bonds maturity and directions of the unexpected target interest rate, this study analyzes the effect of the unexpected interest rate on the corporate credit spreads. The empirical results suggest that the effect of the unexpected interest rate on the corporate credit spreads is larger with the shorter maturity, and when the economy is in the recovery and boom, the influence of easing and tightening monetary policy on the corporate credit spreads is almost the same. However, when the economy is in the recession, the influence of the easing one on the middle and long term corporate bonds is significant as well as the tightening one on the short term bonds.

• 15:15 – 15:35
Speaker: Wen Chen, Xiamen University
Title: China’s Position, Trade Revenue and Competitiveness in Global Value Chains: An Analysis Based on Trade in Value Added Accounting Framework
Abstract: Based on the value added trade accounting method, this paper tries to employ 1995-2011 WIOD data to measure the degree of China’s participation in the global value chains (GVC) and to analyze its GVC position, value added competence, trade revenue and competitiveness on GVC. The results show that China kept specializing in downstream activities. In the first few years after entering into the WTO, China’s GVC position was getting lower and value added competence getting weaker due to a greater share of processing trade. In recent years, China has seen an increase in its GVC position and value added competence. With deepening of its participation in the GVC, China has gained more trade revenue. The results also show that China has stronger competence in manufacturing sector compared with service sector, and has also gained more trade revenue from the manufacturing sector.

• 16:10 – 16:30
Speaker: Xiaoping He, Xiamen University
Title: Coal Abundance, Economic Transformation and Long-Term Development

Abstract: This study examines the long-term impact of coal resources on local economy by using a county-level dataset from eastern China. The span of time for analysis is characterized by transformation of coal sector in China from a planned to a competitive industry. The findings provide the evidence that coal abundance exert an asymmetric impact on local economy, upon the transformation stage and market state. Specifically, wages grow faster in coal-abundant counties than the others, when there is a coal boom and the market is deregulated. Coal abundance could impede local overall industry and government revenues, given there is a slump in coal market and the market is regulated. Hindrance of coal abundance to GDP growth is significant at whichever the stage of transformation; however, the hindrance gradually declined, with the market-oriented transformation moving on. The article identified positive effects of coal abundance on rural households income, and the effect was particularly significant and robust at the initial phase of the transformation, suggesting the critical role of institutional changes.

• 16:35 – 16:55
Speaker: Brett Inder, Monash University
Title: Data-driven Methods of Measuring Poverty and Their Implications for Development Policy in Timor-Leste.

Abstract: We will look at concepts of multidimensional poverty and consider how principal components methods can be used to estimate the weights given to the different dimensions of poverty. We will show the connections of the weights to preferences in a household utility function. The paper will apply the method to data from Timor-Leste, and show the implications for development priorities in that country.

• 17:00 – 17:20
Speaker: Qingliang Fan, Xiamen University
Title: Virtual World Versus Real World: A Study of The Demand for Cyber Games

Abstract: With the growing popularity of cyber games, relatively little attention has been paid to the income elasticity of demand for cyber games. We examine the relationship between the virtual world attributes in a popular cyber game and real world income variables using cross-sectional prefecture level data in China. We employ the three game attributes: playtime, in-game level and achievement (in terms of accomplished ‘missions’) of the cyber game as the measurements of cyber games participation. We use various socio-economic variables including gross regional product per capita, household dispensable income, Internet access rate, unemployment rate, outdoor activities facilities, number of movie theaters etc., to explain the variation of
the cyber game attributes. Moreover, we also check the relationship between environmental variables such as rainfall, air pollution etc., and the barometers of cyber games participation. Our empirical results show that the income elasticity of demand is significantly negative and inelastic, while other economic variables and environmental variables have less impact on the 'diehard' players but more on those less frequent players. The substitution effect of other leisure activities are strongly negative to the demand of cyber games.

- 17:25 – 17:45

Speaker: Chuhui Li, Monash University

Title: Partial Identification of Treatment Effect in Binary Outcome Models: A Health Economics Application

Abstract: Recent developments in the literature of partial identification have significant implications for the econometric estimation of important policy effects. In the case of health economics, it is often of interest to estimate the effect of a binary policy treatment variable on a binary outcome variable where both may be driven by common observable and unobservable factors. A typical approach for health economists is to assume a parametric model, such as a bivariate probit, together with the use of instrumental variables to achieve point identification. Partial identification analysis of such problems allows for less restrictive assumptions for the underlying data generating process (DGP) in empirical applications, and the estimated bounds for policy measures evaluated under this framework offer more robust measures for policy impacts.

This paper applies the partial analysis approach to a health economics application. We estimate the bounds for average treatment effect (ATE) of private health insurance status on dental service utilisation under a partial identification framework, using data from the Australian National Health Survey. Four bounds from the literature under varying DGP assumptions and their 95% confidence regions are estimated. We show that the resulted confidence bounds for the ATE are much wider than the confidence intervals using a bivariate probit. We found that the bounds based on Chesher (2010) and Shaikh and Vytlacil (2011) have reasonably narrow widths to be informative. We also estimate the bounds for different types of individuals in the population, and we find that the width of the bounds can be very different for different sub-populations. We compare several estimation methods including parametric, non-parametric and semi-parametric smoothing estimators.