APPLIED MACROECONOMICS

Professor Guay Lim

Outputs of the Applied Macroeconomics research program include significant data analysis contained in a number of (sponsored) reports on the Australian economy, as well as research papers using advanced macroeconomic theory and macroeconometric techniques. Examples of the outputs in 2008 are described below.

Reports on the State of the Australian Economy

- *Westpac – Melbourne Institute Indexes of Economic Activity*
- *Westpac – Melbourne Institute Survey of Consumer Sentiment (Australia, NSW, Victoria, Queensland, Western Australia, South Australia)*
- *Westpac – Melbourne Institute Survey of Unemployment Expectations*
- *Manpower – Melbourne Institute Employment Report*
- *Melbourne Institute Wages Report*
- *TD Securities – Melbourne Institute Monthly Inflation Gauge*
- *Melbourne Institute Survey of Consumer Inflationary Expectations*
- *Melbourne Institute Household Saving and Investment Report*
- *Melbourne Institute Monthly Bulletin of Economic Trends*

Understanding the Australian Economy

Review of the Australian Economy 2008–09: Recession, Retrenchments and Risks

This article provides a brief review of the Australian economy as it grapples with the implications of the global financial crisis. It discusses the probability of a recession, the states and industries likely to face severe retrenchments, and the risks to inflation from easy monetary policy in conjunction with a stimulatory fiscal policy. (Forthcoming, *Australian Economic Review*, March 2009, G. Lim, C.L. Chua, E. Claus and S. Tsiaplias)

Phillips Curve and the Equilibrium Rate of Unemployment

A time-varying Phillips curve was estimated as a means to examine the changing nature of the negative relationship between wage inflation and the unemployment rate in Australia. The implied equilibrium unemployment rate was generated and the analysis showed the important role played by variations in the slope of the Phillips curve in changing the equilibrium unemployment rate. The deviations of actuals from the estimated equilibrium unemployment rates also performed well as measures of inflationary pressures. (G. Lim, R. Dixon and S. Tsiaplias)

Nesting Yield Curve Shifts and Rotations in a Model of Monetary Policy Shocks

In response to monetary policy shocks, the term-structure generally shifts but sometimes rotates. This paper produces an empirically implementable model for nesting both responses. Estimates from data on the United States, Canada, Australia and New Zealand using latent factor models and identification through heteroskedasticity offer informational advantages over event studies. The results strongly support the hypothesis that differing term-structure responses are reactions to different types of monetary policy shock, rather than differing reactions to the same policy shock. Model simulations produce results that closely resemble actual outcomes. (E. Claus with M. Dungey)

A Univariate Model of Aggregate Labour Productivity

In this paper, the authors set out a model of labour productivity which distinguishes between shocks which change productivity permanently, and shocks which have transient effects on productivity. They show that this model is a type of unobserved components model — a random walk with drift plus noise model. The advantage of this approach is that it provides a coherent framework to identify the deterministic trend growth component and also the productivity-enhancing (or technology-related) stochastic components. The model is applied to aggregate labour productivity in Australia and the time series of technology shocks extracted is used to shed some light on the contributions of policy reforms to productivity. (G. Lim with R. Dixon)

Forecasting Methodologies

Forecasting Australian Macroeconomic Time Series with a Large Variable Set

This paper investigates the forecasting performance of the diffusion index approach for the Australian economy, and considers the forecasting performance of the diffusion index approach relative to composite forecasts. Weighted and unweighted factor forecasts are benchmarked against composite forecasts, and forecasts derived from individual forecasting models. The results suggest that diffusion index forecasts tend to improve on the benchmark AR forecasts. The authors also observe that weighted factors tend to produce better forecasts than their unweighted counterparts. They find, however, that the size of the forecasting improvement is less marked than previous research, with the diffusion index forecasts typically producing mean square errors of a similar magnitude to the VAR and BVAR approaches. (S. Tsiaplias and C.L. Chua)

Seven Leading Indexes of Employment

This paper constructs seven leading indexes of New Zealand employment and compares their forecasting performance. The paper has two aims. The first is to extend the leading index approach to

employment. Typically, the literature focuses on output and to a lesser extent on inflation. Output and employment share many similarities which make the leading index approach particularly appealing. The second aim is to assess the forecasting performance of indexes constructed using various methods available in the literature. The list of construction methods aims to be comprehensive including all major approaches, but it remains by no means exhaustive. The methods divide into two main categories: those based on a small number of component series and those based on large datasets. They reflect varying degrees of technical sophistication, ranging from simple scoring of changes to relying on frequency domain methods to estimate dynamic latent factors. The results show that, despite the varying degree of statistical sophistication, no single index dominates in terms of accuracy in forecasting employment growth one to four quarters ahead. This suggests that relying on a suite of models may be the optimal forecasting strategy. (E. Claus)

A Bayesian Simulation Approach to Inference on a Multi-State Latent Factor Intensity Model

This paper provides a Bayesian approach to inference on a multi-state latent factor intensity model to manage the problem of highly analytically intractable pdfs. The sampling algorithm used to obtain posterior distributions of the model parameters includes a particle filter step and a Metropolis-Hastings step within a Gibbs sampler. A simulated example is conducted to show the feasibility and accuracy of this sampling algorithm. The approach is applied to the case of credit ratings transition matrices. (C.L. Chua, G. Lim and P. Smith)

Macroeconometrics and Macro-Simulations

Productivity Shocks in the Short and Long Run

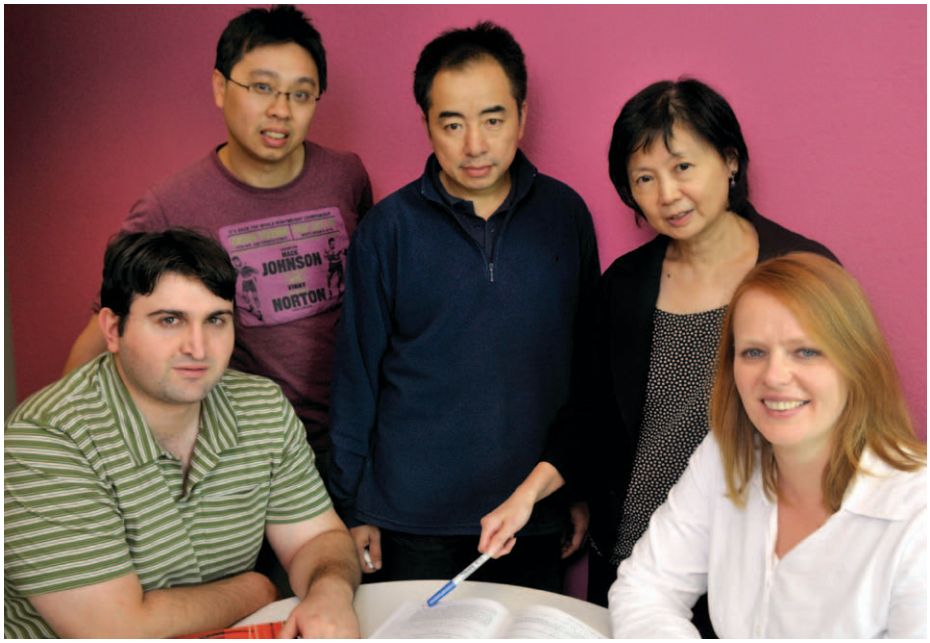
This paper uses a dynamic general equilibrium model to study the nexus between productivity growth and unemployment.The model predicts a positive effect of productivity on unemployment in the short run and a negative effect on unemployment in the long run. The model was applied to a diverse set of data and estimated using maximum likelihood and structural vector autoregression techniques.The authors find empirical evidence from a number of countries to support the hypothesis (P. Chen with G. Gong, A. Rezai and W. Semmlar)

Cyclical Fiscal Policy, Income Inequality and Welfare in Small Open Economies

This paper compares the effects of pro- and counter-cyclical government spending on income inequality and welfare in a small open economy. The authors examine the consequences of alternative government spending rules following shocks to productivity, domestic interest rates, terms of trade and export demand. The simulated results show that the type of spending rule makes negligible difference to welfare, in the face of domestic or external shocks. However, pro-cyclical government spending reduces income inequality by more than counter-cyclical spending behaviour across different shocks and alternative relative labour intensities. (G. Lim with P.D. McNelis)

Boom–Bust Cycles, Default Risk and Asset Pricing

This paper finds default perception and default risk to be important in understanding the co-movements of various real and financial variables during economic booms and busts. The authors use time series data for the US post-war economy and measure default premia by corporate bond spreads. They find that an increase in risk perception during periods of economic contractions have an impact on credit conditions, default premia of corporate bonds and asset pricing, in general. These effects have significant implications for monetary authorities in their implementation of monetary policy during periods of economic downturns. (P. Chen with L. Grüne and W. Semmler)



Members of the Applied Macroeconomics team