Australian National University

NATURAM PRIMUM COGNOSCERE RERUM

ANNUAL REPORT 2015

Centre for Applied Macroeconomic Analysis

Crawford School
of Public Policy

College of
Asia and the Pacific

Message from the Director

Some important changes were introduced in 2015. The CAMA research programs were reviewed in order to maintain the quality and diversity of our programs. The Longer Run Issues program merged with the Economic Growth and Development program to create a new program named Growth, Demographics and Productivity.

The list of program directors has also changed. The program directors that completed their terms in 2015 are: Richard Dennis, Raghbendra Jha, Pedro Gomis-Porqueras, Rodney Strachan and Alan Woodland. New program directors are: Corrado Di Guilmi, Martin H Davies, Bruce Chapman, Christopher Smith, James Morley and Benjamin Wong. I thank all the program directors who have contributed to CAMA in 2015.

The past year was very successful and productive for CAMA. We had 48 new working papers added to the CAMA Working Paper Series, six CAMA newsletters were produced, CAMA organised four public lectures, 14 seminars and two international conferences, CAMA provided funding for CAMA Research Associates to attend a number of international conferences and workshops and seven new research associates were added to CAMA.

CAMA is a network of scholars. The success of CAMA draws directly on the active participation of researchers around the world who believe in excellence in research and public policy and contributing to public goods. I would like to thank everyone in CAMA for their contributions and their support.

Warwick McKibbin
Director, Centre for Applied Macroeconomic Analysis

Contents

Centre for Applied Macroeconomic Analysis – an overview

The Centre for Applied Macroeconomic Analysis (CAMA) is located in Crawford School of Public Policy at The Australian National University. It was established in 2003 to bring together economists working on applied macroeconomic and financial market issues throughout Australia and across the globe. CAMA's objectives are to advance research and postgraduate training in applied macroeconomic and financial issues.

CAMA was founded by Professor Warwick McKibbin who is also the current director. The deputy director is Professor Ippei Fujiwara. Former directors include Professor Renée Fry-McKibbin and Professor Shaun Vahey and deputy directors include Professor Heather Anderson, Professor Mardi Dungey and Professor Renée Fry-McKibbin.

Research programs

The research activities of the Centre are built around a series of research programs headed by a program director (or directors). The program director is responsible for organising research in the area of the program. Proposals for new programs are welcome and will be considered by the executive committee. Proposals should be directed to the CAMA director. It is envisaged that programs will be active for three years after which they are reviewed.

CAMA Research Programs
Behavioural macroeconomics and complexity
Climate change and energy
Commodities and the macroeconomy
Growth, demographics and productivity
Finance and the macroeconomy
Globalisation and trade
Macroeconomic policy frameworks
Macroeconomic theory
Model uncertainty and macro-econometrics
Multi-country models and methods
Open economy macroeconomics

Behavioural macroeconomics and complexity

Directors	Corrado Di Guilmi and Timo Henckel
Research Advisor	Prof Dr Cars H Hommes
Research Associates	See complete list under **Research Associates** below

Behavioural macroeconomics seeks to refine our understanding of the discipline by accounting for relevant features of human behaviour that are absent in the standard economics framework. Instead of assuming a hyper-rational representative agent, the basis for analysis are empirically well-documented psychological and sociological factors such as cognitive bias, fairness concerns, herding, and social status. Acknowledging the growing econometric and experimental evidence that human behaviour often fails the predictions of the rational expectations, full-information paradigm, this research program provides an umbrella for all research dedicated to melding the insights from behavioural economics and psychology with modern macroeconomics in a sound and rigorous way.

An integral part of this research agenda is the problem of aggregation and the presence of agent heterogeneity, which considers the economy as an adaptive nonlinear network that generates complex, emergent behaviour. Salient features of this approach include dispersed interaction of agents, multiple levels of organisation and interaction, bounded

rationality, continual adaptation of agents' behaviours, actions and strategies, deep, unquantifiable uncertainty and persistent out-of-equilibrium dynamics.

The emphasis is both on theoretical and empirical models:

- Theoretical behavioural models will analyse the positive and normative macroeconomic implications of behavioural phenomena including, for example, prospect theory, hyperbolic discounting, adaptive learning, bounded rationality, habit/status concerns, money illusion, and endowment effects. Models of complexity analyse the properties of emergent behaviour, with a large emphasis on solution and simulation methods, including combinatorial mathematics, statistical mechanics and nonlinear computational algorithms. Many of these fall under the heading of agent-based models.
- Empirical models will use behavioural theory and complexity models to improve our statistical understanding and forecasting abilities of the macroeconomy and to analyse policy regimes and institutional features. These models are not only supposed to refine our understanding of individual choice but also help us understand and design better economic institutions and enhance overall welfare analysis.

The program seeks to foster a strong and growing network of researchers enthusiastic about behavioural macroeconomics and complexity. Activities will include workshops/conferences, collaboration with other CAMA research programs, and graduate courses/seminars on this topic.

Climate change and energy

Directors	Warwick McKibbin and Barbara Buchner (from 2016)
Research Associates	See complete list under **Research Associates** below

Rapid global economic growth, particularly in China and India, has important implications for global energy use as well as causing a rapid rise in greenhouse gas emissions with implications for climate change. This program focuses on the importance of energy use and climate change as well as the associated policy responses on the macro-economy.

This program focuses on:

- methodologies for projecting long term energy use and carbon dioxide emissions
- the relationship between macroeconomic performance and energy use
- the role of relative prices in energy demand and macroeconomic outcomes
- the macroeconomic consequences of alternative energy polices
- the macroeconomic consequences of alternative climate change strategies and
- the design and impact of alternative emission permit trading systems.

Collaborative work in this project is linked to the ANU Climate Change Institute and the ANU Energy Change Institute.

The Climate Change and Energy program of CAMA is included in the Think Tank Map

Commodities and the macroeconomy

Directors	Paul Cashin and Renée Fry-McKibbin
Research Associates	See complete list under **Research Associates** below

The implications of demand for resources by emerging market economies and understanding the special features of commodity economies are currently issues for policymakers and investors. Emerging markets in particular are an important driver of the most recent commodity price cycle. This program seeks to understand commodity cycles and their financial market and macroeconomic effects, as well as the interactions between the three from both an emerging and developed country perspective.

The program focuses on:

- understanding trends and cycles in commodity markets
- currency, equity and commodity market linkages
- global business cycle linkages and the role of emerging markets
- oil price shocks and their transmission through the macroeconomy
- food price shocks and their pass through to the macroeconomy and poverty implications
- policy responses to relative price movements
- the macroeconomics of sovereign wealth funds.

Growth, demographics and productivity

Directors	Bruce Chapman and Creina Day
Research Associates	See complete list under **Research Associates** below

The Growth, Demographics and Productivity program promotes understanding of the economic growth processes for developing and developed countries. Growth in per capita output comprises growth in "three P's", productivity, participation and population, which provide the following key areas of focus:

How do research and development (R&D) and investment in human capital sustain economic growth in OECD countries? Can policies enhance long run growth prospects? What lessons and evidence relevant to developing countries does the experience of OECD countries provide? What role do institutions play in facilitating innovation and education led growth? What are potential drags on economic growth in the form of demographic change, finite resources, trade and macroeconomic policies?

Understanding changes in patterns and determinants of labour input. How do gender wage gaps, retiring cohorts, and immigration affect labour markets? What role does education play in labour productivity? Can we identify policies to promote labour force participation and productivity?

The world's population doubled twice in the twentieth century, but is not expected to double once this century. What are the economic determinants and consequences of changes in fertility, life expectancy and demographic structure? Are these changes inevitable? How does demographic change benefit economies? What are the challenges facing ageing economies? What policies reconcile demographic change with productivity growth and employment?

Finance and the macroeconomy

Directors	Mardi Dungey and Renée Fry-McKibbin
Research Associates	See complete list under **Research Associates** below

Financial market developments impact directly and indirectly on real economy outcomes, particularly in the short term, and developments in the macroeconomy affect financial markets, systems and institutions. This program brings together work on financial interactions with an assessment of the impact of markets and institutions on the economy and implications for policy. It includes assessment of broader trends in the macroeconomy and finance. Areas of investigation include:

- the role of international financial markets in transmitting shocks between economies, including during periods of financial stress
- regional and global financial cooperation and architecture, with a particular focus on East Asia
- financial markets, institutions and systems, including the integration of financial markets, electronic finance, harmonisation of financial systems and the nexus between finance and economic growth and development
- policy dialogue and the interaction between policy decisions, such as fiscal and monetary policy and structural policies, and financial development, including a focus on East Asia.

Globalisation and trade

Directors	Martin H Davies and David Vines
Research Associates	See complete list under **Research Associates** below

The linkages between countries are influenced by their macroeconomic policies. These policies can be conducted so as to reduce risks and increase the likelihood of good outcomes.

The objective of this program is to undertake research into design of policies in three areas. The first of these is the overall framework of macroeconomic policy, including the extent to which policy can influence exchange rates in a world of a high degree of capital mobility, and the integration of fiscal and monetary policy in the management of the economy. The second is the extent to which the financial system can be regulated so as to minimise the risk of currency and financial crises and to lessen the costs of such crises as occur. The third is the way in which the liberalisation of international trade can be managed so as to avoid the growth of preferential discrimination between countries and the growth of discriminatory trading blocs.

Research in this program will also be conducted into the connection between these areas: the extent to which trade liberalisation strategies demand a change to exchange rate strategies and the extent to which the need to minimise the risks of financial crises has implications for exchange rate strategies.

Macroeconomic policy frameworks

Directors	Ippei Fujiwara and Christopher Smith
Research Associates	See complete list under **Research Associates** below

Considerable progress has been made over the past twenty years in developing robust monetary and fiscal policy frameworks. For many countries these have been aimed at maintaining low and stable inflation over the medium term, and public debt sustainability over the medium to long term. Associated implications and areas of importance have been less well developed.

This program will bring together analytical and policy researchers interested in evaluating and advancing work in areas such as:

- the implications of medium-term fiscal and monetary policy frameworks for: the volatilities of output, interest rates and exchange rates; short run stabilisation policies; intergenerational balance; financial stability; and external stability
- the role of governance procedures and associated institutional frameworks in sustaining the credibility of fiscal and monetary policy frameworks, including the

relative roles for policy coordination and operational independence, and the role of enforcement rules in fiscal policy frameworks

- macroeconomic policy frameworks for sustainable growth and employment and
- appropriate policy frameworks for common currency regimes.

Macroeconomic theory

Directors	Bruce Preston
Research Associates	See complete list under **Research Associates** below

This program brings together various research agendas in the area of theoretical macroeconomics. The emphasis is on (i) the construction of macroeconomic models that have specific decision-theoretic foundations and equilibrium concepts; and/or (ii) the use of such models to understand observed economic phenomena, analyse policy regimes and other institutional features; and/or (iii) research that refines and expands the set of tools for undertaking research in (i) and (ii).

Research in this area includes equilibrium business cycle theories, growth theory, recursive policy games, recursive contract theory, dynamic public finance, international macroeconomics, expectations modelling and learning, sunspots and multiple equilibria in general equilibrium, search theoretic foundations of labor markets and monetary theory, and dynamic political economics.

The program's activities include:

- the annual Australasian Workshop in Macroeconomic Dynamics (WMD)
- Macroeconomics Study Group
- occasional advanced workshop/courses featuring experts in the relevant field.

Model uncertainty and macro-econometrics

Directors	James Morley and Benjamin Wong
Research Associates	See complete list under **Research Associates** below

This program focuses on the role of model uncertainty in empirical macroeconomics. This literature treats the 'true' model as an unobservable - an admission that has implications for many areas of macroeconomic analysis and has generated two distinct research sub-programs. One represents a renewed interest in model evaluation, comparison, selection and combinations when model misspecification is explicitly recognized. A second sub-program is based on accounting for model uncertainty explicitly in constructing predictive densities for objects of economic interest, conducting statistical inference and evaluating policies.

Multi-country models and methods

Directors	Ippei Fujiwara and Warwick McKibbin
Research Associates	See complete list under **Research Associates** below

Countries are linked through trade flows and asset markets. The modeling of these interactions has been undertaken in large scale model such as: computable general equilibrium models (for trade); large scale macro-econometric models (aggregated trade and capital flows); and intertemporal general equilibrium models (trade detail and asset flows). There is also an emerging literature of smaller theoretical simulation models particularly of real business cycle and new Keynesian theories which attempt to understand global interdependence better. This program will bring together researchers interested in the linkages between countries and how these linkages impact on our understanding of economic outcomes in small open and large open economies.

Open economy macroeconomics

Directors	Martin Berka and Christoph Thoenissen
Research Advisor	Michael B Devereux, Charles Engel, and Maurice Obstfeld
Research Associates	See complete list under **Research Associates** below

The objective of the Open Economy Macroeconomics (OEM) program is to further the development and testing of optimization-based OEM frameworks. The main foci of interest of the program are:

- international transmission mechanisms in OEM frameworks
- international relative prices and the international transmission of shocks
- cooperation and monetary and fiscal stabilization policies in OEM frameworks.

CAMA RBA Shadow Board

On the first Tuesday of every month (except in January) the Board of the Reserve Bank of Australia (RBA) meets to decide on a target for the cash rate. This decision is highly significant for the wider economy and is therefore closely monitored by the financial markets.

The CAMA RBA Shadow Board consists of nine voting members and one non-voting chair, all distinguished macroeconomists, who offer their own policy recommendations one day before the official RBA decision.

A novel feature of the CAMA RBA Shadow Board is the requirement that members offer their policy recommendations probabilistically. When a central bank sets the preferred target cash rate, the decision necessarily constitutes a compromise, a careful balancing

and weighting of all salient upside and downside risks. The imprecision stems from the uncertainties associated with real-time measurements, latent variables, model type, model parameters and the inherently unpredictable nature of the macroeconomy. Whatever rate the central bank sets, there is a considerable probability that a different rate would be more appropriate.

Nevertheless, most central banks provide little quantifiable information on the uncertainty confronting policymakers. Conventional central bank communication of interest rate setting does not formalize risk considerations and the probability of extreme events. The probability that the interest rate should be substantially different from the 'most preferred' target rate receives little attention. Central banks currently record formally neither the uncertainty experienced by individual board members, nor by the board as a whole.

Each member of the CAMA RBA Shadow Board records the uncertainty by giving probabilistic assessments of the appropriate (target) interest rate for each round. The higher the percentage attached to a given interest rate, the more confident the member is that this rate is the appropriate target.

The aim of the CAMA RBA Shadow Board is to:

1. foster a lively and informed debate in the community about each interest rate decision and about macroeconomics more generally
2. show how individual policymakers can quantify the uncertainty surrounding a preferred target cash rate and how these uncertainties may be aggregated to provide a probabilistic collective view
3. generate data on probabilistic monetary policy decision-making that may be used in future research.

It is important to note that this project is not aimed at predicting RBA Board behaviour. In common with shadowing exercises in other countries (e.g. the US Shadow Open Market Committee), this is a normative exercise in stating the most suitable interest rate for current and expected economic conditions, not forecasting what the RBA will actually do.

The CAMA RBA Shadow Board (initially going by the name of PRO-POL) was conceived in August 2011 by Dr Timo Henckel, Professor Shaun Vahey, and Dr Elizabeth Wakerly, all of CAMA. Until June 2013 the logistics were handled by Mr Damien Hughes and Dr Elizabeth Wakerly.

Current members

Paul Bloxham

Paul Bloxham is Chief Economist for HSBC in Australia and New Zealand. Prior to joining HSBC, Paul Bloxham was an economist within the Reserve Bank of Australia's Economic Analysis Department where he headed up the overseas economies and financial conditions sections, as well as working on domestic forecasting and prices. Bloxham has published a number of papers, including on household finances, asset prices and monetary policy. He is also a regular commentator on local and international business television and a frequent contributor of opinion editorials to the Australian newspapers. He holds a Master degree in public financial policy from the London School of Economics.

Mark Crosby

Mark Crosby is Dean of the Global Master of Business Administration (GMBA) and interim Dean of the Global Bachelors of Business Administration (GBBA) effective 17 October 2011. Dr Crosby has held academic appointments at the University of Toronto, the University of New South Wales, and the University of Melbourne, where he was most recently the Associate Dean (International) at the Melbourne Business School. Dr Crosby has co-authored a widely-used textbook on macroeconomics, and publishes regularly in academic journals, contributes articles to the media, and has written a number of book chapters. Besides his university activities, Dr Crosby has worked or consulted widely for government and private enterprises including the World Bank, the Hong Kong Institute for Monetary Research, the Monetary Authority of Singapore, the South African Treasury, the Center for Strategic and Policy Studies in Brunei, the Commonwealth Bank of Australia, the Reserve Bank of New Zealand, and BHP Billiton. Most recently he completed a project on South Africa's current account deficit and a project on diversifying Brunei's economy. He is a frequent guest on ABC TV and writes regularly for Australian newspapers.

Mardi Dungey

Mardi Dungey is Professor of Economics and Finance at the University of Tasmania, a Senior Research Associate at the Centre for Financial Analysis and Policy at the University of Cambridge and Adjunct Professor at the Centre for Applied Macroeconomic Policy at The Australian National University. Mardi moved to the University of Tasmania in October 2008, from a position as the Deputy Director of the Centre for Financial Analysis and Policy at the University of Cambridge where she had been since early 2005. Prior to that she has held academic positions at The Australian National University

and La Trobe University. She has also worked at Econtech Consulting Group and the Reserve Bank of Australia, and held visiting positions at the IMF, University of Cambridge, Princeton University, the Federal Reserve Bank of Atlanta and Australian and New Zealand Treasuries. She speaks regularly to international forums on her research and holds a number of competitive grants. Mardi is currently a co-editor of the *Economic Record* and an Associate Editor of the *Journal of Applied Econometrics*, the *Journal of Asian Economics*, and the *Journal of Banking and Finance*.

Bob Gregory

Professor Gregory has held positions at the University of Melbourne, London School of Economics, The Australian National University, Industries Assistance Commission, Northwestern University, and visiting positions at Harvard University, the University of Chicago and University College London.

He has been closely involved in the analysis and development of Australian economic policy; a member of the Board of Management at the Australian Institute of Family Studies, principal consultant in a series of government Aged Care Reviews, member of the committee that recommended the introduction of student income contingent loans, member of the Board of the Reserve Bank of Australia and the Australian Sciences and Technology Council. Professor Gregory has been awarded the Order of Australia Medal and has an honorary doctorate from the University of Melbourne.

Timo Henckel
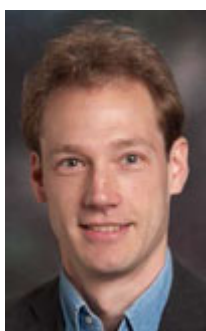
Timo Henckel (non-voting chair) is a Lecturer in the Research School of Economics at ANU College of Business and Economics. He is also director of CAMA Behavioural Macroeconomics and Complexity research program. He was previously an adjunct lecturer in Crawford School of Economics and Government at The Australian National University. He holds a PhD from the London School of Economics where he has also briefly taught. His research interests are in monetary economics, international macroeconomics, and behavioural macroeconomics.

Guay Lim

Guay Lim is a Professorial Research Fellow at the Melbourne Institute of Applied Economics and Social Research and an Adjunct Professor at the Department of Economics, University of Melbourne. Her research interests are in quantitative macroeconomics and macroeconometrics and her papers have been published in major international journals. She has held visiting research positions at the IMF, ECB, RBNZ, Osaka University, Brown University, Georgetown University and Fordham University. Guay is

also the head of the Macroeconomics Unit at the Melbourne Institute and they publish indicators of activity about the Australian economy on a regular basis.

Warwick McKibbin

Professor Warwick McKibbin has a Chair in Public Policy in the ANU Centre for Applied Macroeconomic Analysis (CAMA) in Crawford School of Public Policy at The Australian National University (ANU). He is also an ANU Public Policy Fellow; a Fellow of the Australian Academy of Social Sciences; a Distinguished Fellow of the Asia and Pacific Policy Society; a non-resident Senior Fellow at the Brookings Institution in Washington D.C (where he is co-Director of the Climate and Energy Economics Project) and President of McKibbin Software Group Inc. Professor McKibbin was foundation Director of the ANU Centre for Applied Macroeconomic Analysis and foundation Director of the ANU Research School of Economics. He was also a Professorial Fellow at the Lowy Institute for International Policy for a decade from 2003 where he was involved in its design and development. Professor McKibbin served for a decade on the Board of the Reserve Bank of Australia (the Australian equivalent of the Board of Governors of the US Federal Reserve) until July 2011. He has also served as a member of the Australian Prime Minister's Science, Engineering and Innovation Council, and on the Australian Prime Minister's Taskforce on Uranium Mining Processing and Nuclear Energy in Australia.

James Morley

James Morley is Professor of Economics at the University of New South Wales. He received his PhD from the University of Washington in 1999. Before moving to Australia in 2010, he was a faculty member at Washington University in St Louis (1999-2010) and a research fellow at the Federal Reserve Bank of St Louis (2004-2010). He has also held visiting positions at the Bank of Canada and the Federal Reserve Bank of St Louis and has worked regularly with the forecasting firm Macroeconomic Advisers. He is the current president of the Society for Nonlinear Dynamics and Econometrics and is a founding member of the Shadow RBA Board. His research focuses on time-series applications in macroeconomics, finance, and international finance. He has written on topics such as trend/cycle decomposition for macroeconomic data, the long-run consequences of recessions, stock market volatility and return predictability, and the adjustment of exchange rates to purchasing power parity. His articles have appeared in top academic journals, including the *Journal of Econometrics*, the *Journal of International Economics*, the *Journal of Monetary Economics*, and the *Review of Economics and Statistics.*

John Romalis

John Romalis studies international economics and macroeconomics. Romalis has published well-known papers on the determinants of international trade, and on the economic effects of tax and trade policy in journals such as the *American Economic Review*, the *Quarterly Journal of Economics*, the *Review of Economics and Statistics*, and the *Journal of the European Economic Association*. Romalis has three main current lines of research. He studies the trade and welfare implications of tariff reductions since the Uruguay Round of trade negotiations. A second line of research studies the causes of the collapse of international trade during the recent global recession. Finally, Romalis studies how firms engaged in international competition determine the quality and price of their products.

After completing degrees in economics and in law, Romalis worked negotiating contracts governing swaps and other derivatives for a commercial bank, and then moved to the economics research department in Australia's central bank. After completing his PhD in economics at the Massachusetts Institute of Technology, he joined the University of Chicago Booth faculty in 2001. John Romalis has also served as a Resident Scholar for the International Monetary Fund, has been a Faculty Research Fellow for the National Bureau of Economic Research, and had appointments at Princeton University and The Australian National University. In 2013 John Romalis moved to The University of Sydney where he was appointed the Sir Hermann Black Chair of Economics.

Jeffrey Sheen

Jeffrey Sheen is a Professor of Economics at Macquarie University. He has been on the faculty of the Universities of Manchester, Essex and Sydney, and has had a visiting appointment at the Reserve Bank of Australia. He has published his research in major international journals, and his interests span international economics, macroeconomics, labour and international finance. He obtained his PhD at the London School of Economics.

Past members

Saul Eslake

August 2011-June 2014

Saul Eslake has been Chief Economist at Bank of America Merrill Lynch Australia since December 2011. He was previously a Program Director with the Grattan Institute (a non-aligned think tank affiliated with Melbourne University) and, between 1995 and 2009, Chief Economist at ANZ Bank. He is also a non-executive director of Hydro Tasmania, and a member of the National Housing Supply Council and the Australian Statistics Advisory Council.

Mark Thirlwell

August 2011-September 2013

Mark Thirlwell is Director of International Economy Program and Fellow of G20 Studies Centre. Mark has been tracking global economic trends since he joined the Bank of England's International Divisions in 1990 where he worked as part of the Whitehall Economists Subgroup, coordinating the forecasting of major emerging markets across the Bank, Treasury, the FCO and other stakeholders. Mark subsequently joined J P Morgan as a Vice President in Economic Research with responsibility for Central Europe. Before joining Lowy, he served as Senior Economist at Australia's Export Finance and Insurance Corporation, working on sovereign risk with a particular focus on East Asia.

Publications

The CAMA Working Paper Series covers a broad range of topics in one of the eleven areas covered by the CAMA research programs. The working papers are available online and through RePec (Research Papers in Economics) and SSRN (Social Science Research Network.

CAMA Working Paper Series
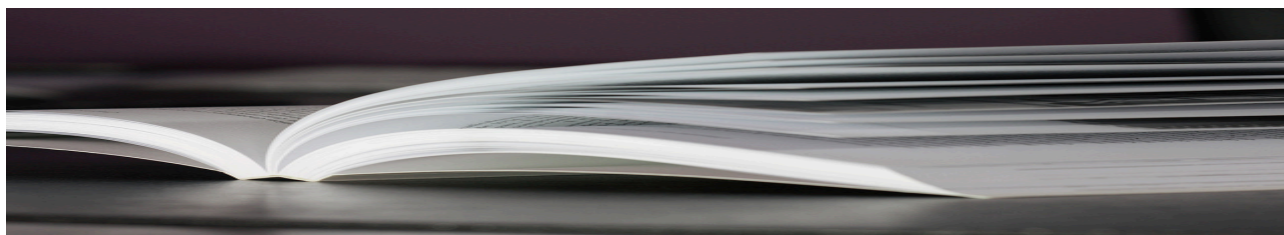
Image by Sebastien Wiertz on Flickr

Paper no.	Title	Authors
48/2015	A comment on Wu and Xia (2015), and the case for two-factor Shadow Short Rates	Krippner L
47/2015	Effects of US quantitative easing on emerging market economies	Bhattarai S Chatterjee A Park WY
46/2015	Parameter bias in an estimated DSGE model: does nonlinearity matter?	Hirose Y Sunakawa T
45/2015	Short- and long-run tradeoff monetary easing	Oikawa K Ueda K
44/2015	Risk sharing in a world economy with uncertainty shocks	Kollmann R
43/2015	Italian ordinary statute regions and derivatives	Fantini G Oldani C
42/2015	Specification tests for time-varying parameter models with stochastic volatility	Chan JCC
41/2015	Large Bayesian VARs: A flexible Kronecker error covariance structure	Chan JCC
40/2015	Extremal dependence tests for contagion	Fry-McKibbin R Hsiao CYL
39/2015	How portfolios evolve after retirement: evidence from Australia	Spicer A Stavrunova O Thorp S

38/2015	QE and the bank lending channel in the United Kingdom	Butt N
		Churm R
		McMahon M
		Morotz A
		Schanz J
37/2015	The coming US interest rate tightening cycle: smooth sailing or stormy waters?	Arteta C
		Kose MA
		Ohnsorge F
		Stocker M
36/2015	Disinflations in a model of imperfectly anchored expectations	Gibbs CG
		Kulish M
35/2015	Time-varying effect of oil market shocks on the stock market	Kang W
		Ratti RA
		Yoon KH
34/2015	Fertility and housing	Day C
33/2015	Corporate asset pricing models and debt contracts	Dozsa M
		Janda K
32/2015	Bayesian model comparison for time-varying parameter VARs with stochastic volatility	Chan JCC
31/2015	A Bayesian model comparison for trend-cycle decompositions of output	Eisenstat E
		Chan JCC
		Grant AL
30/2015	Controlling carbon emissions from U.S. power plants: how a tradable performance standard compares to a carbon tax	McKibbin WJ
		Morris A
		Wilcoxen PJ
29/2015	Slower growth and vulnerability to recession: updating China's global impact	Tyers R
28/2015	Selective reporting and the social cost of carbon	Havranek T
		Irsova Z
		Janda K
		Zilberman D
27/2015	What drives the global official/policy interest rate?	Ratti RA
		Vespignani JL

26/2015	China's electrical equipment manufacturing in the Global Value Chain: a GVC income analysis based on World Input-Output Database (WIOD)	Lu Y
25/2015	Seasonal adjustment with and without revisions: a comparison of X-13ARIMA-SEATS and CAMPLET	Abeln B Jacobs JPAM
24/2015	Do transparency initiatives work? Assessing the impact of the Special Data Dissemination Standard (SDDS) on data transparency	Vadlamannati KC Cooray A
23/2015	The great plunge in oil prices: causes, consequences, and policy responses	Baffes J Kose MA Ohnsorge F Stocker M
22/2015	Meta-Granger causality testing	Bruns SB Stern DI
21/2015	Does the central bank respond to credit market factors? A Bayesian DSGE approach	Kitney P
20/2015	Modeling energy price dynamics: GARCH versus stochastic volatility	Chan JCC Grant AL
19/2015	Efficient estimation of Bayesian VARMAs with time-varying coefficients	Chan JCC Eisenstat E
18/2015	Technology transfer and North-South	Davies M
17/2015	Mismatch shocks and unemployment during the great recession	Furlanetto F Groshenny N
16/2015	Indonesian macro policy through two crises	Azwar P Tyers R
15/2015	The interest rate pass-through in the euro area during the sovereign debt crisis	Borstel Jv Eickmeier S Krippner L
14/2015	The optimal inflation rate under Schumpeterian growth	Oikawa K Ueda K
13/2015	A new monthly indicator of global real economic activity	Ravazzolo F Vespignani JL

12/2015	Carbon dioxide emissions in the short run: the rate and sources of economic growth matter	Burke PJ Shahiduzzaman M Stern DI
11/2015	Co-movements of ethanol related prices: evidence from Brazil and the USA	Kristoufek L Janda K Zilberman D
10/2015	A structural investigation of the Chinese economy with a hybrid monetary policy rule	Li R Wang J
09/2015	China and global macroeconomic interdependence	Tyers R
08/2015	Pitfalls of estimating the marginal likelihood using the modified harmonic mean	Chan JCC Grant AL
07/2015	The stochastic volatility in mean model with time-varying parameters: an application to inflation modeling	Chan JCC
06/2015	Inflation and professional forecast dynamics: an evaluation of stickiness, persistence, and volatility	Mertens E Nason JM
05/2015	Can monetary policy surprise the market?	Claus E Dungey M
04/2015	Globalization and international risk-sharing: do political and social factors matter more than economic integration?	Balli F Pierucci E
03/2015	State-dependent pricing, firm entry and exit, and non-neutrality of money	Oikawa K Ueda K
02/2015	Financial integration and China's global impact	Tyers R
01/2015	Channels of risk-sharing at a micro level: savings, investments and the risk aversion heterogeneity	Balli F Pericoli FM Pierucci E

Newsletters

CAMA published six newsletters in 2015. The newsletter is made with the contribution of the CAMA members and it includes among other things new members, projects, awards, publications, interviews, and events. An online copy of the newsletters can be found at the CAMA website (https://cama.crawford.anu.edu.au/cama-publications/newsletter/2015).

Other publications

Publications written by the CAMA research associates in 2015.

Behavioural macroeconomics and complexity program

- Chiarella C and Di Guilmi C, 'Monetary Policy and Debt Deflation: Some Computational Experiments', *Macroeconomic Dynamics* (forthcoming).

Climate change and energy program

- Burke PJ and Liao H. 2015, 'Is the price elasticity of demand for coal in China increasing?', *China Economic Review* 36: 309–322.
- Burke PJ., Shahiduzzaman, Md, and Stern DI, 2015, 'Carbon dioxide emissions in the short run: The rate and sources of economic growth matter.' *Global Environmental Change* 33: 109–121.
- Cai Y and McKibbin WJ, 'Uncertainty and International Climate Change Negotiations', *Italian Economic Journal*, 14 February 2015.
- Csereklyei Z. and Stern DI (2015), 'Global energy use: Decoupling or convergence?' *Energy Economics* 51, 633-641.
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Commodities and the macroeconomy program

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Finance and the macroeconomy program

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Media

In 2015, the CAMA affiliates contributed to the public debate participating in interviews with prestigious news agencies such as *The Canberra Times*, ABC news, *The Business*, *Australian Financial Review*, *The Australian*, and others. They also have articles published in *Advance*, Crawford School's magazine.

CAMA participated on Twitter: @CAMacroAnalysis and it was mentioned on Wikipedia: (http://en.wikipedia.org/wiki/Centre_for_Applied_Macroeconomic_Analysis).

CAMA also contributed to the APPS Policy Forum. The Policy Forum is a public policy website devoted to Asia and the Pacific. It is located at Crawford School of Public Policy. Articles published by CAMA on APPS in 2015 include :

- Big carbon cuts need new policy framework
- Acting on interest rate uncertainty

- Targets put Australia in front of climate fight
- Keeping the status quo is no longer an option
- Short term pain, long term gain
- Getting better by design

Other articles published by APPS Policy Forum can be found at
http://www.policyforum.net/

Events

CAMA actively promotes events such as workshops and conferences in Australia and internationally through sponsorship, organisation and advertising. CAMA is a representative on the NBER East Asian Seminar in Economics (EASE) and the National Economic Research Organizations (NERO) network.

CAMA also hosts the CAMA Macroeconomics Brown Bag Seminars where staff, visitors and PhD students have an opportunity to present their work.

Workshops and conferences

Prospects of Korean reunification and its global economic effects

6-7 March 2015
Seoul, Korea
Warwick McKibbin, Jong Wha Lee and other prominent speakers.

In this workshop, renowned Korean and international specialists in government, academia and research institutes presented their academic and policy-oriented research related to the prospects of Korean reunification and its economic consequences for the Korean peninsula and neighboring countries. They shared their insights through in-depth discussion on economic and security benefits and costs of unification and provided a direction for Korea's policy towards reunification.

Growth prospects and fragilities in the global economy

17-18 March 2015
The Brookings Institution, Washington DC, US
Various speakers.

Seven years after the onset of a great recession, the United States and the European Union face continued headwinds, and their challenges reverberate throughout the global economy to affect the outlook in major emerging economies. A number of policy and political uncertainties confound efforts to project global growth over the next decade. This two-day workshop brought together leading scholars on the economics of key regions with an eye to weaving together a consistent view of the likely global economic outlook over the coming decade. It explored regional dimensions of the global economic outlook and linkages between them.

The first morning focused on monetary policies in major economies and the potential spillovers of those policies to the global economy. The first afternoon explored developments in energy markets and the outlook for the European Union. The second day began with sessions on China and emerging markets, and the afternoon focused on global productivity growth and the future of manufacturing.

Melbourne Institute Macroeconomic Policy Meetings

15-16 October 2015
Melbourne Institute
Ippei Fujiwara, Warwick McKibbin, Renee McKibbin, James Morley, Adrian Paga, Bruce Preston and other prominent speakers.

The Melbourne Institute Macroeconomic Policy Meetings aimed to foster discussion on 'hot issues' in macroeconomic policy by involving leading scholars conducting research with state-of-the-art theoretical and/or empirical tools. In 2015 there were focused on macro-prudential policy.

CAMA sponsored the event.

Workshop of the Australasian Macroeconomics Society (WAMS) 2015

11-12 December 2015

The Australasian Macroeconomics Workshop (AMW) and the Workshop on Macroeconomic Dynamics (WMD) have joined forces to become the Workshop of the Australasian Macroeconomics Society (WAMS).

The second Workshop Australasian Macroeconomics Society (WAMS), hosted by the UNSW Australia, Business School and School of Economics, Sydney, Australia, welcomed submissions in all areas of macroeconomics.

The workshop had three principal purposes. First, it was an opportunity for Australasian macroeconomists to share and discuss their results and ideas with each other, to encourage excellence and collaboration in research in macroeconomics in Australasia. Second, by bringing top international researchers to Australia, the workshop aimed to help connect researchers here with top people from around the world in a two-way learning process. Third, by bringing together both theoretical and applied researchers, the workshop aimed to foster synergies between and across all modern scientific approaches to macroeconomics.

CAMA was a sponsor of the event.

Public lectures

New applications of complex systems modelling to population health: obesity and tobacco control

1 May 2015
Dr Ross A Hammond, The Brookings Institution.

In this talk, Dr Hammond provided an overview and several examples of new 'systems' approaches to population health policy and interventions facilitated by the use of complex systems modeling. He talked about important lessons learned, limitations and key best practices, and future potential. The presentation drew on several active research projects funded by the National Institutes of Health in the United States, including work engaging with interventions in both the US and Australia and ranging from the community to the national level.

Monetary policy spillovers: a global empirical perspective

8 May 2015
Dr Pierre Siklos, Wilfrid Laurier University

In this talk Pierre Siklos provided an overview of his recent paper Monetary policy spillovers - a global empirical perspective.

This paper shed new light on the spillovers from US unconventional monetary policies by examining the behavior of select financial asset prices at the daily frequency and by incorporating a crucial element in the conduct of monetary policy, namely the tone of verbal announcements by central banks. Pierre eschewed the event study approach and adopted a time series perspective. Monetary policy surprise easings are found to decrease yields in most economies since October 2008. The size of the response varied considerably across the economies examined, but for 10-year government bonds, they ranged from a 15 to 30 basis points reduction in yields in the United States, the United Kingdom and the euro zone. The impact was found to be larger on long-term sovereign bonds than on shorter-term assets, and stronger in major economies, such as the United Kingdom and the euro zone, and in Canada. His analysis also provided evidence that the tone of US Fed communication and a country's own central bank policy statements, constructed using text analysis software, had a significant impact on asset prices. The impact of the tone of these statements had been notably stronger since the start of the crisis, with financial market reactions appearing to be relatively more sensitive to the content of statements during the post-crisis period.

Education matters

4 September 2015
Professor Jong-Wha Lee, Director, Asiatic Research Institute, Korea University.

In this talk, Jong-Wha Lee discussed a new long-term data set on educational attainment of the population for 146 countries since 1870, and analysed linkages across countries and over time between education and important economic and political variables, such as economic growth, fertility, and democracy. This lecture was based on the author's recent book, *Education and Modernization Worldwide: From the 19th through 20th Century* with Robert J Barro (Oxford University Press, 2015).

Monetary and fiscal policy in the Great Moderation and the Great Recession

8 October 2015
Professor David Vines, Oxford University

In this talk, David Vines provided an overview of his recent paper 'Monetary and fiscal policy in the Great Moderation and the Great Recession'. In this paper he argued for a new approach to monetary and fiscal policy.

During the Great Moderation, the inflation targeting regime worked well. Central banks used the interest rate to stabilize inflation, and—subject to inflation being controlled—stabilized the level of demand. Fiscal policy exerted discipline over public-sector deficits, thereby—indirectly—managing the level of public debt. The author found that the 'fiscal housekeeping' worked well, because the monetary authorities were stabilising the economy. But once private-sector deleveraging led to the Great Recession, and interest rates hit their zero bound, the economy could no longer be managed by monetary policy. Recovery came to depend on the 'automatic stabilisers': as output and tax revenues fell, public debt was created, supplying the assets which a deleveraging private sector wished to hold. David believed that the recovery has been very gradual. It would have been much faster if fiscal policy had been responsible for the restoration of full employment, in an environment which tolerated the necessary rises in public debt. The author argued that policies of austerity, designed to reduce public debt, have slowed the recovery. Sustained growth will not return until the private sector begins to invest strongly again, creating the financial assets which the private sector wishes to hold, thereby enabling public debt to be retired. This has not yet happened, according to David Vines, because the private sector, correctly, does not believe that macroeconomic policy is capable of sustaining a strong recovery.

Seminars

Japanese investment dynamics and the comparison of theoretical models

23 April 2015
Luke Meehan, PhD Student, CAMA

In this seminar Luke Meehan provided an overview of his recent paper, 'Japanese investment dynamics and the comparison of theoretical models'. In this paper Luke suggested the variables used in modelling the aggregate investment - and in consequence the models themselves - had different effects at different points in time. This was intuitively satisfying given various narratives in the literature, amongst which: interest rates may have minimal impacts on investment at the zero-lower bound; financing constraints bind more tightly during a credit crunch; firms alter fixed investment to 'cater' to equity investors; uncertainty may only curtail behaviour during crises; oil prices are particularly important during 'oil shocks'. To consider this suggestion Luke implemented a Dynamic Model

Averaging (DMA) technique from the forecasting literature, in which both variable coefficients and forecasting model constituent variables could change over time. DMA analysis of aggregated Japanese industrial data from 1965 to 2014 demonstrated considerable time-variation in the constitution of optimal forecasting models. Comparison of the DMA results with prior expectations of model utility highlighted several interesting potential findings, including apparent indifference to cash-flow from financing or operations, the inverse cyclicality of the number of investment components, the time-consistency of aggregate Tobin's average q, and the cyclicality of uncertainty. Luke further discussed the potential usefulness of this empiric technique, and considered issues of parameter selection and stability.

Renewable energy - Time-frequency dynamics of biofuels

21 May 2015
Professor Karel Janda, Charles University and University of Economics in Prague.

In this talk Karel Janda provided an overview of his recent paper 'Renewable energy - Time-frequency dynamics of biofuels'.

In this paper the author used the wavelet coherence methodology to investigate relations between prices of ethanol and biodiesel and its feedstocks. His continuous wavelet framework allowed for discovering price connections and their evolution in both time and frequency domain in the most important ethanol and biodiesel markets – EU, Brazil and the USA. For ethanol, the author showed that the long-run relationship between prices of ethanol and corn (in USA) or sugar (in Brazil) was positive, strong and stable in time. Importantly, he showed that the prices of feedstock leaded the prices of ethanol and not the other way around. The price lead of feedstock was documented for both short and long run horizons. His qualitative results held true even when the influence of crude oil prices was accounted for by utilising partial wavelet coherence approach. Karel contributed to the discussion about the role of biofuels in the increase of agricultural commodity prices, especially around 2008 and 2011. His results indicated that high sugarcane and corn harvests in 2013 and 2014 should have a significant long run impact on the economics of biofuels.

News shocks and unemployment in an estimated small open economy DSGE model

18 June 2015
Gan-Ochir Doojav, PhD student, Crawford School of Public Policy.

In this seminar Gan-Ochir Doojav provided an overview of his recent paper, 'News shocks and unemployment in an estimated small open economy DSGE model'. This paper assessed the importance of news shocks as sources of labour market and macroeconomic fluctuations. To end this, the presented paper augmented a standard small open economy

DSGE model (e.g., Justiniano and Preston 2010) to include the theory of unemployment proposed by Galí (2011) and endogenous preference shifter, similar to that used by Galí et al. (2011). The model was estimated using Bayesian methods with data for Australia and the United States (US), and driven by both unanticipated and news (anticipated) shocks. The empirical analysis showed that the estimated model was able to qualitatively replicate the existing VAR evidence on news-driven business cycles (e.g., Kosaka 2013 and Kamber et al 2014), and the presence of news shocks has the potential to improve the model fit. Gan-Ochir concluded that news shocks were main drivers of Australian business cycle fluctuations in the inflation-targeting period.

The evolution of the Australian monetary policy transmission mechanism

6 August 2015
Jamie Cross, PhD student, Research School of Economics, ANU.

In this seminar Jamie Cross provided an overview of his recent paper, 'The evolution of the Australian monetary policy transmission mechanism'. This paper sought to answer two fundamental questions of Australian central bankers. First, has the Australian monetary policy transmission mechanism changed over time? Specifically, are changes present in: (1) the propagation mechanism and (2) the magnitude and frequency of exogenous shocks to the economy. Second, can accounting for these structural changes enhance forecast performance?

To answer these questions Jamie utilised a time varying structural vector autoregressive model. Impulse response functions assessed the responsiveness of inflation and unemployment to monetary policy shock across four periods of Australian economic significance: the great inflation of the 1970's, the float of the exchange rate in 1983, the introduction of inflation targeting in mid-1993 and the Global Financial Crisis of 2007-2009. The main result found by the author was that the propagation mechanism had changed over the sample period. Since the great inflation of the 1970s both inflation and unemployment rates had become more responsive to changes in monetary policy. In recent years however this responsiveness had reversed with both inflation and unemployment responses weakening. One notable exception was the Global Financial Crisis period through which the inflationary response to monetary policy temporarily strengthened, however unemployment responses did not. This provided an empirical suggestion that the traditional Phillips Curve had also changed over time. The results also revealed that inflation was susceptible to large exogenous shocks whilst unemployment was not. Next, in line with the literature on the US and UK economies the forecast results indicated that incorporating time variation within the propagation mechanism and in the volatility of the exogenous shocks leaded to enhanced forecast performance.

Effect of subsector energy efficiency changes upon carbon emissions

13 August 2015
Anil Kavuri, PhD student, CAMA

In this seminar Anil Kavuri provided an overview of his recent paper, 'Effect of subsector energy efficiency changes upon carbon emissions'. Given the central role of energy efficiency and limitations of current models for accurate analysis, this study made contributions to this debate. First, by constructing a Subsector Mix-Unit Input-Output Efficiency Matrix that incorporated a subsector KLEM production framework. In short, the model, consisted of three components; modelling at a subsector level, analysing in applicable units and, undoubtedly the most significant contribution, a detailed process level efficiency framework. The effectiveness of the proposed model and the most widely used alternative-structural decomposition analysis in isolating the effects of subsector energy efficiency trends on emissions was tested by the author. To this end, a data set was constructed to test the models. The results found by Anil showed that the proposed model correctly isolates subsector/processes energy efficiency developments, the effects of product additions and was able to imply energy input price and output price changes, whereas structural decomposition approaches possessed great difficulties failing all parts of the test. Given the models ability to project bottom up process level energy efficiency changes onto the economy, there was a clear case for data collection to enable practical application of the model.

Introducing PROFOR- research tool for macro forecasting

3 September 2015
Professor Shaun Vahey, University of Warwick.

This seminar was an introduction to the PROFOR toolbox for macro forecasting with MATLAB. For more details about PROFOR, please refer to the following link http://www2.warwick.ac.uk/fac/soc/wbs/subjects/emf/profor/. The seminar included a talk for 40 minutes and a live demo session for 20 minutes.

Global optimum in models with individual income shocks

22 September 2015
Akshay Shanker, PhD student, CAMA

In this seminar Akshay Shanker provided an overview of his recent paper, 'Global optimum in models with individual income shocks'. The paper presented results to solve infinite horizon problems on infinite dimensional state space, and then used the theoretical results to solve a planner problem with incomplete markets in an Aiyagari/Hugget model where people receive idiosyncratic shocks.

A more reliable output gap that reflects policymakers' beliefs

19 October 2015
Benjamin Wong, Reverse Bank of New Zealand

When imposing a low signal-to-noise ratio on output growth, the Beveridge-Nelson decomposition is able to produce an output gap that is consistent with policymakers' beliefs, but does not suffer the reliability problems that plague other methods that assume a similarly smooth trend. In particular, the author showed that the output gap based on the Beveridge-Nelson decomposition using Bayesian estimation of an autoregressive model of US quarterly output growth with a dogmatic prior on the sum of the autoregressive coefficients was persistent and large in amplitude, moved closely with the NBER-dated expansions and recessions, and led to better out-of-sample forecasts of output growth and inflation than output gaps based on a quadratic trend, the Hodrick-Prescott filter, or the bandpass filter.

Optimal monetary policy in open economies revisited

22 October 2015
Jiao Wang, PhD Student, CAMA

In this seminar Jiao Wang provided an overview of her recent paper, 'Optimal monetary policy in open economies revisited'. The author analysed optimal monetary policy under the local currency pricing in a two-country dynamic stochastic general equilibrium model. Quadratic loss functions for noncooperative policymakers were derived.

The author showed that non-cooperative policymakers face extra trade-offs regarding stabilizing differentials between marginal costs and prices induced by deviations from the law of one price. The welfare analysis found by Jiao demonstrated that, contrast to most of the previous literature, welfare gains from cooperation with pricing to market are sizable even with only technology shocks. Given the baseline model calibration in Jiao's paper, the author concluded that consumers in each country under cooperation have to give up six per cent of aggregate consumption to be as well-off as under noncooperation in response to a positive technology shock of the unitary size.

What if structural breaks were in the number of shocks?

27 October 2015
Luis Uzeda, PhD student, Research School of Economics, ANU.

In this seminar Luis Uzeda provided an overview of his recent paper, 'What if structural breaks were in the number of shocks?' This paper proposed a statistical framework to investigate the number stochastic processes (shocks) underlying macroeconomic aggregates. In this sense, Luis study suggested a novel perspective on structural breaks

where breaks occur in the number of innovations driving a time series while its underlying structure, as denoted by latent components, was preserved. To model breaks, Luis used a mixture innovation approach which leads to a state space with regime switching representation. The latter enabled detection of whether, where and when breaks occurred. Regime identifiability was discussed within a Bayesian setting. Rank reduction of the covariance matrix from reducing the number of innovations was also addressed. In particular, a Markov Chain Monte Carlo algorithm which builds upon the properties of Toeplitz matrices and recent advances in precision-based methods was developed. In accordance with modern macroeconomic models, the empirical results provided support to innovations-parsimonious state space models for various macroeconomic time series. Notably, evidence in favour of reducing the number of shocks was particularly stronger during recession episodes. A forecasting application to several measures of US inflation reinforces the usefulness of his framework.

Evolving macroeconomic dynamics of the Indian economy

18 November 2015
Dony Alex, PhD student, CAMA

In this seminar Dony Alex provided an overview of his recent paper, 'Evolving macroeconomic dynamics of the Indian economy'. This paper examined how the transmission of the structural shocks had evolved for India over the post-reform period from 1991 to 2014. Dony used a Bayesian time varying parameters structural vector autoregression with stochastic volatility, with identification of the structural shocks done with sign restrictions. The author found that supply and monetary policy shocks had larger impact post-2004 after the major banking and financial reform were undertaken in India. To understand the behaviour of the volatility of inflation and output variable, Dony had also used a univariate stochastic volatility model for a larger sample from 1973 onwards. He detected sharp reductions in volatility in the post-reform period for both inflation and industrial output. Interestingly, he also found that during the East Asian crisis, the volatility surge was much higher than observed during the recent global financial crisis.

The optimal coordination of fiscal and monetary policy in a New Keynesian framework

25 November 2015
David Vines, Oxford University

In this seminar David Vines provided an overview of his recent paper, 'The optimal coordination of fiscal and monetary policy in a New Keynesian framework'. This paper studied the coordination of monetary and fiscal policy in a simple New Keynesian model. The author showed that, in such a setup and when the policymaker acts with commitment, it is optimal not to use fiscal policy to stabilise inflation. The author illustrated this result

using additively separable preferences and Greenwood-Hercowitz-Huffman (1988) preferences, and he discussed the intuition behind this result

The macroeconomic effects of the carry-trade collapse

26 November 2015
Arjuna Mohottala, PhD student, CAMA

In this seminar Arjuna Mohottala provided an overview of his recent paper, 'The macroeconomic effects of the carry-trade collapse'. Over the past decade or so, one of the most popular investment and trading strategies in the currency market has been the so-called Yen-carry trade. Most of the currency literature investigates the risk and return characteristics of the currency carry trade. Many macroeconomic series are sampled quarterly, although potentially useful predictors of carry trade collapse are observed at a higher frequency. The author looked at whether a threshold vector autoregression (TVAR) approach can improve the analysis of macroeconomic effect of carry trade collapse by using the changes in the nominal exchange rate as the threshold variable to capture the asymmetric effects of interest rates and exchange rate volatilities implied by the literature. Empirical results found by Arjuna shed some light on the relationships between carry trade collapse and the Australian economy. The author found a strong evidence of nonlinearity in the data, with a regime switch occurring if the volatility of the nominal exchange rate reached the estimated threshold value. Further, the research found significant impact of interest rate differential shocks on the probability of regime switch taking place between the low and high nominal exchange rate volatility regimes. The findings of this paper suggested that exchange rate shocks play an important role in the Australian economy.

Optimal monetary and fiscal policy in an economy with endogenous public debt

10 December 2015
David Vines, Oxford University

In this seminar David Vines provided an overview of his recent paper, 'Optimal monetary and fiscal policy in an economy with endogenous public debt'. This paper used a New Keynesian framework to study the coordination of fiscal and monetary policies, in response to an inflation shock when the policymaker acts with commitment. The author first showed that, in the simplest New Keynesian model, fiscal policy played no part in the optimal policy response, because of the comparative advantage which monetary policy had in the control of inflation. The author then added endogenous public debt and showed that the above result was no longer true. When the initial stock of debt was low, it was optimal for government spending to remain largely inactive, but when the initial stock of debt was high, government spending should play a significant stabilisation role in the first period. This finding was robust to adding endogenous capital accumulation and inflation persistence in the Phillips curve.

Seminars organised with Tax and Transfer Policy Institute

Do output contractions cause investment in fiscal capacity?

19 May 2015
Christian Gillitzer, Senior Economist, Reserve Bank of Australia.

In this seminar Christian Gillitzer showed that an economic slump can induce a government to invest in fiscal capacity. Large negative income shocks stress the revenue raising capability of narrow tax bases, making an increase in tax base breadth desirable relative to its fixed implementation cost. A broader tax base enables revenue to be raised at lower tax rates, which reduces the efficiency cost of taxation. The behaviour of US state governments during the Great Depression supports the model: states experiencing larger than average negative income shocks were more likely to adopt a retail sales tax than were states experiencing smaller than average income shocks.

Roads, cars and taxes

9 September 2015

Professor Cliff Winston, Brookings Institution USA; Dr Mark Harrison, ANU; Dr Elizabeth Taylor, University of Melbourne.

There is increasing attention being paid to urban congestion and growing talk of transport regulation, congestion and other road user charges as potential policy responses.

Most recently on the agenda of the Council of Australia's federal and state governments, and included in the recommendations of the *Henry Tax Review* in 2010, are congestion taxes the way forward? Professor Cliff Winston is a leading international authority on the costs and policy approaches to congestion. He is an applied microeconomist and senior fellow in the Economic Studies program at the Brookings Institution, and studies microeconomic policy and its impact on government performance, specialising in industrial organisation, regulation, and transportation.

He was followed by perspectives from two Australian researchers, Dr Elizabeth Taylor and Dr Mark Harrison.

Staff and Associates

Director

Professor Warwick McKibbin has a Chair in Public Policy in the ANU Centre for Applied Macroeconomic Analysis (CAMA) in Crawford School of Public Policy at The Australian National University (ANU). He is also an ANU Public Policy Fellow; a Fellow of the Australian Academy of Social Sciences; a Distinguished Fellow of the Asia and Pacific Policy Society; a non-resident Senior Fellow at the Brookings Institution in Washington D.C (where he is co-Director of the Climate and Energy Economics Project) and President of McKibbin Software Group Inc. Professor McKibbin was foundation Director of the ANU Centre for Applied Macroeconomic Analysis and foundation Director of the ANU Research School of Economics. He was also a Professorial Fellow at the Lowy Institute for International Policy for a decade from 2003 where he was involved in its design and development. Professor McKibbin served for a decade on the Board of the Reserve Bank of Australia (the Australian equivalent of the Board of Governors of the US Federal Reserve) until July 2011. He has also served as a member of the Australian Prime Minister's Science, Engineering and Innovation Council, and on the Australian Prime Minister's Taskforce on Uranium Mining Processing and Nuclear Energy in Australia.

Prof McKibbin received his B.Com (Honours 1) and University Medal from University of NSW (1980) and his AM (1984) and a PhD (1986) from Harvard University. He was awarded the Centenary medal in 2003 "For Service to Australian Society through Economic Policy and Tertiary Education".

Professor McKibbin is internationally renowned for his contributions to global economic modeling. Professor McKibbin has published more than 200 academic papers as well as being a regular commentator in the popular press. He has authored/ edited 5 books including *Climate Change Policy after Kyoto: A Blueprint for a Realistic Approach* with Professor Peter Wilcoxen of Syracuse University. He has been a consultant for many international agencies and a range of governments on issues of macroeconomic policy, international trade and finance, greenhouse policy issues, global demographic change and the economic cost of pandemics.

Deputy Director

Ippei Fujiwara is Professor of Macroeconomics at Crawford School of Public Policy, associate editor of Japan and the World Economy, research associate at the Globalization and Monetary Policy Institute, Federal Reserve Bank of Dallas, co-director for Australia-Japan Research Centre, and the deputy director at the Center for Applied Macroeconomic Analysis (CAMA). He completed his DPhil in economics at the University of Oxford (Nuffield), and a PhD in Applied Economics at Osaka University. Professor Fujiwara worked for the Bank of Japan for 18 years before joining Crawford School of Public Policy where his research has focused on international finance, monetary economics and macroeconomics. His recent publications are in *Journal of Applied Econometrics*, *Journal of Monetary Economics*, *Journal of International Money and Finance*, *Journal of Money Credit and Banking*, *Journal of Economic Dynamics* and *Control and Macroeconomic Dynamics*.

Management committee

Creina Day

Renée Fry-McKibbin

Ippei Fujiwara

Timo Henckel

Warwick McKibbin

Administrator

Rossana Bastos-Pinto

PhD students

Dony Alex

Max He

Nguyen Hoai Bao

Shane Johnson

Karen Kai-Yun

Anil Kavuri

Kate McKinnon

Luke Meehan

Arjuna Mohottala

Chris Perks

Barckhordair Sajad

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Professor Adrian Pagan, University of Sydney

Dr Martin Parkinson, Department of Prime Minister and Cabinet

Professor Jeffrey Sachs, Columbia University

Dr Ric Simes, Deloitee Access Economics

Mr Grant Spencer, Reserve Bank of New Zealand

Professor Heizo Takenaka, Keio University, Japan

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Professor Clive Granger (1934-2009), Advisory Board member (2003-2009), UC San Diego, Awarded 2003 Nobel Prize in Economics

Professor Lawrence Klein (1920-2013), Advisory Board member (2003-2013), Wharton School, University of Pennsylvania, Awarded 1980 Nobel Prize in Economics

Program directors

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Martin Berka	University of Auckland	Open Economy Macroeconomics program
Paul Cashin	International Monetary Fund	Commodities and the Macroeconomy program
Bruce Chapman	The Australian National University	Growth, Demographics and Productivity program
Martin H Davies	Washington and Lee University	Globalisation and Trade program
Creina Day	The Australian National University	Growth, Demographics and Productivity program
Corrado Di Guilmi	University of Technology, Sydney	Behavioural Macroeconomics and Complexity program
Mardi Dungey	University of Tasmania	Finance and the Macroeconomy program
Ippei Fujiwara	The Australian National University	Macroeconomic Policy Frameworks program Multi-Country Models and Methods program
Timo Henckel	The Australian National University	Behavioural Macroeconomics and Complexity program
Warwick McKibbin	The Australian National University	Multi-Country Models and Methods program

Name	Institution	Program
		Climate Change and Energy program
Renée Fry-McKibbin	The Australian National University	Finance and the Macroeconomy program
		Commodities and the Macroeconomy program
James Morley	The University of New South Wales	Model Uncertainty and Macro-Econometrics
Bruce Preston	University of Melbourne	Macroeconomic Theory program
Christie Smith	Reserve Bank of New Zealand	Macroeconomic Policy Frameworks program
Christoph Thoenissen	University of Sheffield	Open Economy Macroeconomics program
David Vines	University of Oxford	Globalisation and Trade program
Benjamin Wong	Reserve Bank of New Zealand	Model Uncertainty and Macro-Econometrics

Doctoral student associates

Name	Institution	Program
Anil Kavuri	The Australian National University	Climate Change and Energy program
Christopher Perks	The Australian National University	Macroeconomic Policy Frameworks program
Christopher Perks	The Australian National University	Macroeconomic Theory program
Barckhordair Sajad	University of Tehran	Climate Change and Energy program
Akshay Shanker	The Australian National University	Climate Change and Energy program

Research associates

Name	Institution	Program
Stefano D Addona	University of Rome	Finance and the Macroeconomy program
Pierre-Richard Agenor	The University of Manchester, UK	Growth, Demographics and Productivity program
Jaime Alonso-Carrera	Universidade de Vigo, Spain	Macroeconomic Theory program
Baris Alpaslan	The University of Manchester, UK	Growth, Demographics and Productivity program
Heather Anderson	Monash University	Model Uncertainty and Macro-Econometrics
James Ang	Nanyang Technological University	Finance and the Macroeconomy program
James Ang	Nanyang Technological University	Growth, Demographics and Productivity program
Mikhail Anufriev	University of Technology, Sydney	Behavioural Macroeconomics and Complexity program
Kosuke Aoki	The University of Tokyo	Macroeconomic Policy Frameworks program
Kerim Peren Arin	Zayed University	Finance and the Macroeconomy program
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Faruk Balli	Massey University	Finance and the Macroeconomy program
Michelle L Barnes	Federal Reserve Bank of Boston	Finance and the Macroeconomy program

Name	Institution	Program
Dirk Baur	Kühne Logistics University	Finance and the Macroeconomy program
Gianluca Benigno	London School of Economics	Open Economy Macroeconomics program
Prasad Bhattacharya	Deakin University	Model Uncertainty and Macro-Econometrics
Sambit Bhattacharyya	University of Sussex	Growth, Demographics and Productivity program
Hilde C Bjørnland	Norwegian School of Management	Finance and the Macroeconomy program
Hilde C Bjørnland	Norwegian School of Management	Commodities and the Macroeconomy program
Martin Bodenstein	Asian Development Bank	Open Economy Macroeconomics program
Martin Bodenstein	Asian Development Bank	Macroeconomic Policy Frameworks program
Martin Bodenstein	Asian Development Bank	Macroeconomic Theory program
Alison Booth	The Australian National University	Growth, Demographics and Productivity program
Melisso Boschi	Senate of the Republic of Italy	Finance and the Macroeconomy program
Robin J Brooks	Goldman Sachs	Growth, Demographics and Productivity program
Ralph Bryant	Brookings Institution	Multi-Country Models and Methods program
Barbara Buchner	Climate Policy Initiative	Climate Change and Energy program
Willem Buiter	Citigroup Centre	Behavioural Macroeconomics and Complexity program
Paul Burke	The Australian National University	Climate Change and Energy program

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Yu-chin Chen	University of Washington	Commodities and the Macroeconomy program
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David Cook	Hong Kong University of Science and Technology	Open Economy Macroeconomics program
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Richard Dennis	University of Glasgow	Macroeconomic Policy Frameworks program
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Takashi Kano	Hitotsubashi University	Open Economy Macroeconomics program
Jinill Kim	Korea University	Macroeconomic Policy Frameworks program
Ian King	University of Queensland	Macroeconomic Theory program

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Gordon Menzies	University of Technology, Sydney	Multi-Country Models and Methods program
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Tatsuyoshi Okimoto	The Australian National University	Commodities and the Macroeconomy program
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Nicola Spagnolo	Brunel University	Finance and the Macroeconomy program
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Gabriele Standardi	Fondazione Eni Enrico Mattei	Multi-Country Models and Methods program

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Rodney Strachan	The University of Queensland	Model Uncertainty and Macro-Econometrics
Alan Sutherland	University of St Andrews	Open Economy Macroeconomics program
Kang Yong Tan	Franklin Templeton Investments	Multi-Country Models and Methods program
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Susan Thorp	University of Technology, Sydney	Finance and the Macroeconomy program
Russell Toth	The University of Sydney	Growth, Demographics and Productivity program
Chung Tran	The Australian National University	Macroeconomic Theory program
Sirimon Treepongkaruna	The University of Western Australia	Finance and the Macroeconomy program
Takayuki Tsuruga	Kyoto University	Open Economy Macroeconomics program
Rod Tyers	The University of Western Australia	Multi-Country Models and Methods program
Jean-Robert Tyran	University of Conpenhagen	Behavioural Macroeconomics and Complexity program

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Lawrence Uren	University of Melbourne	Macroeconomic Theory program
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Simon Van Norden	HEC Montreal	Finance and the Macroeconomy program
Tugrul Vehbi	Reserve Bank of New Zealand	Finance and the Macroeconomy program
Joaquin Vespignani	University of Tasmania	Finance and the Macroeconomy program
Yuichiro Waki	The University of Queensland	Macroeconomic Theory program
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Sumila Wanaguru	Central Bank of Sri Lanka	Finance and the Macroeconomy program
Mark Weder	University of Adelaide	Macroeconomic Theory program
Peter Wilcoxen	Syracuse University	Multi-Country Models and Methods program
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John C Williams	Federal Reserve Bank of San Franciso	Macroeconomic Theory program
John C Williams	Federal Reserve Bank of San Franciso	Model Uncertainty and Macro-Econometrics
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Justin Wolfers	University of Michigan	Behavioural Macroeconomics and Complexity program

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Wing Thye Woo	University of California Davis	Multi-Country Models and Methods program
Alan Woodland	University of New South Wales	Globalisation and Trade program
Mark Wright	University of California, Los Angeles	Globalisation and Trade program
Eliza Wu	University of Technology Sydney	Finance and the Macroeconomy program
Ying Xu	The Australian National University	Finance and the Macroeconomy program
Fang Yao	Reserve Bank of New Zealand	Open Economy Macroeconomics program
Fang Yao	Reserve Bank of New Zealand	Finance and the Macroeconomy program
Fang Yao	Reserve Bank of New Zealand	Macroeconomic Policy Frameworks program
Daniel Zizzo	Newcastle University	Behavioural Macroeconomics and Complexity program

Visitors

Karel Janda
Charles University
23 April - 18 September 2015

Ross Hammond
The Brookings Institution
30 April - 3 May 2015

Pierre Siklos
Wilfrid Laurier University
7 May - 8 May 2015

Martin Davies
Washington and Lee University
22 June - 3 July 2015

Arusha Cooray
University of Nottingham
13 July - 17 July 2015

Jong Wha Lee
Korea University
1 September - 9 September 2015

Shaun Vahey
University of Warwick
3 September 2015

Cliff Winston
The Brookings Institution
8 September - 10 September 2015

David Vines
University of Oxford
29 September - 21 December 2015

Benjamin Wong
Reserve Bank of New Zealand
19 October

Funding

The table below summarizes CAMA funding for 2015 (including ARC and other research grants held within CAMA & fund raising for conferences).

Income	
Student fees	0.00
Other income	204,377.75
Internal sales	0.00
Internal allocations	0.00
Operating grant	82,741.00
Investment income	307.63
Total Income	287,426.38
Expenses	
Salaries and related costs	173,083.58
Equipment - capital	0.00
Equipment - non-capital	8,127.57
Scholars expenses	19,518.47
Utilities and Maintenance	0.00
Travel field & survey expenses	134,858.27
Expendable research materials	-6.85
Contributions	0.00
Consultancies	5,500.00
Consumables	6,353.60
Depn & Amort	0.00
Internal purchases	0.00
Other expenses	6,918.70
Contingency	0.00
Total Expenditure	354,125.53
Current year operating result	-66,699.15
Transfer inflow/outflow	3,799.00
Net current year operating result	-62,900.15
Prior year cash result	473,693.82
Net operating position	410,793.67

CAMA by numbers

In 2015 CAMA:

published **48** working papers and **6** newsletters

attracted **7** new affiliates

hosted **20** events, including **14** seminars, **4** public lectures and **2** international conferences

received **10** visitors

was followed by **130** Twitter users and tweeted **476** times since its start in August 2014

was a team of **185** research associates

Contact

Homepage: https://cama.crawford.anu.edu.au/

Email: cama.admin@anu.edu.au

Twitter: @CAMacroAnalysis

Centre for Applied Macroeconomic Analysis (CAMA)

Crawford School of Public Policy

College of Asia and the Pacific

The Australian National University

#132, Lennox Crossing

Acton ACT 2601

Director: Warwick McKibbin

Ph: 61 2 6125 0301

E: Warwick.McKibbin@anu.edu.au

Administrator: Rossana Bastos Pinto

Ph: 61 2 6125 8108

E: Rossana.Bastos@anu.edu.au