



Australian
National
University

ANNUAL REPORT 2019

Centre for Applied Macroeconomic Analysis



Crawford School
of Public Policy

College of
Asia and the Pacific

Message from the Director

We have completed another successful year.

We welcomed 11 new associates to CAMA in 2019: Biplob Chowdhury, Younjong Eo, Qazi Haque, Anil Kavuri, Bonsoon Koo, Yingying Lu, Kate McKinnon, Laurent Pauwels, Brian Trung Duc Tran, Vladimir Volkov and Anthony Wiskich. We also welcomed the new member of the CAMA RBA Shadow Board: Sally M Auld.

CAMA introduced a new group of associates. The CAMA Scholars Associates is a network of enthusiastic people recently graduated in Economics or Finance. In 2019, the applications were opened for junior public servants, research assistants with master's degree and junior academics with PhD.

CAMA is a node of the ARC Centre of Excellence in Population Ageing Research (CEPAR). Established in 2011 and renewed in 2017, CEPAR is a collaboration between academia, government and industry. In 2019, The Australian National University node hosted the 'Data linkage workshop' and the 'Policy dialogue on housing and ageing'. The events brought together leading experts, policy makers, researchers and commentators to discuss the current and future challenges for retirement.

CAMA is a network of economists. 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

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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 for activity, relevance and contributions to the academic and policy communities.

CAMA Research Programs	
Behavioural macroeconomics and complexity	
Climate change and energy	
Commodities and the macroeconomy	
Finance and the macroeconomy	
Globalisation and trade	
Growth, demographics and productivity	
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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 Staff and Associates - Research Associates

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	Barbara Buchner and Warwick McKibbin
Research Associates	See complete list under Staff and Associates - Research Associates

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 policies
- 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 Staff and Associates - Research Associates

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.

Finance and the macroeconomy

Directors	Renée Fry-McKibbin
Research Associates	See complete list under Staff and Associates - Research Associates

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 Staff and Associates - Research Associates

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.

Growth, demographics and productivity

Directors	Bruce Chapman and Creina Day
Research Associates	See complete list under Staff and Associates - Research Associates

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?

Macroeconomic policy frameworks

Directors	Ippei Fujiwara
Research Associates	See complete list under Staff and Associates - Research Associates

Considerable progress has been made over the past 20 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 brings 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 Staff and Associates - Research Associates

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 Staff and Associates - Research Associates

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 recognised. 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 Staff and Associates - Research Associates

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 Staff and Associates - Research Associates

The objective of the Open Economy Macroeconomics (OEM) program is to further the development and testing of optimization-based OEM frameworks. The main focuses 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 formalise 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

Sally M Auld



Sally Auld is chief economist at J.P. Morgan. Auld joined J.P. Morgan in September 2008 as head of fixed income and FX strategy for Australia and New Zealand. She is responsible for views on the Antipodean economic and policy outlook as well as strategic and tactical trade recommendations in Antipodean interest rate and FX markets. Her research is targeted at a variety of institutional clients, both domestic and offshore. Previously, Auld was co-head of economics and interest rate research at ANZ and

commenced her career as an interest rate strategist at Credit Suisse.

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.

Renée Fry-McKibbin



Renée Fry-McKibbin is a Professor of Economics in the Crawford School of Public Policy. She is the Co-Director of the Finance and Macroeconomy Program and the Commodities and the Macroeconomy within CAMA, and a research associate of the Research Project in Forecasting at George Washington University, the National Centre for Econometric Research (NCER) and the Norwegian Centre for Macroeconomic and Petroleum Analysis (CAMP). Renee was Associate Dean Research of the College of Asia & the Pacific at the ANU from 2014 to May 2018. In 2012 she was appointed to the advisory board of the Australian Defence College (ADC). She is an associate editor for the *Journal of Banking and Finance* and *Finance Research Letters*, as well as a co-editor of the *Economic Record*. She has been a visiting scholar or consultant to the European Central Bank, the Federal Reserve Bank of Atlanta, the International Monetary Fund, the Bank of England, the Department of Prime Minister and Cabinet, the Federal Treasury, AUSAID, the New Zealand Treasury and the Reserve Bank of New Zealand.

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 Macroeconomics at the University of Sydney. He received his PhD from the University of Washington in 1999 and was previously at Washington University in St. Louis and the University of New South Wales, most recently as Associate Dean (Research) of the UNSW Business School from 2014-2017. He is an Academic Fellow of the Reserve Bank of New Zealand and has been a visiting scholar at various policy institutions worldwide, including the Bank of Canada, Bank Negara Malaysia, and the Bank for International Settlements. He is a former President of the Society for Nonlinear Dynamics and Econometrics and is currently Co-Editor of the Economic Society of Australia's journal *The Economic Record*. His research focuses on the empirical analysis of business cycles, stabilization policy, and sources of persistent changes in macroeconomic and financial conditions.

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

Mardi Dungey

August 2011-December 2018



Mardi Dungey was 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. Prior to that she has held academic positions at The Australian National University and La Trobe University. She 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 spoke regularly to international forums on her research and held a number of competitive grants. Mardi was 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*.

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.

Bob Gregory

August 2011-May 2018



Professor Gregory has held positions at the University of Melbourne, London School of Economics, 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.

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

Paper no.	Title	Authors
91/2019	Private news and monetary policy - Forward guidance as Bayesian persuasion	Fujiwara I Waki Y
90/2019	Forecasting energy commodity prices: A large global dataset sparse approach	Ferrari D Ravazzolo F Vespignani J
89/2019	The industrial impact of economic uncertainty shocks in Australia	Burrell H Vespignani J
88/2019	Dynamic cost of living index for storable goods	Ueda K
87/2019	Empirical evidence on the dynamics of investment under uncertainty in the US	Haque Q Magnusson LM Tomioka K
86/2019	Risk-sensitive preferences and age-dependent risk aversion	Poonpolkul P
85/2019	Evaluating the portfolio rebalancing hypothesis in the presence of the international goods market	McKinnon K
84/2019	Investigating the drivers of international comovement in real financial asset returns	McKinnon K
83/2019	Uncertainty in a disaggregate model: A data rich approach using Google search queries	Shields K Tran TD
82/2019	The growth effects of El Niño and La Niña: Local weather conditions matter	Couharde C Damette O Generoso R Mohaddes K

81/2019	Checking if the straitjacket fits	Pagan A Wickens M
80/2019	US banking deregulation and local economic growth: Direct effects and externalities	Iltis P Shaffer S Spierdijk L
79/2019	What is new about cryptocurrencies? A visual analysis	Kavuri AS Milne A Wood J
78/2019	Oil curse, economic growth and trade openness	Majumder MK Raghavan M Vespignani J
77/2019	Large hybrid time-varying parameter VARs	Chan JCC
76/2019	Small firms and domestic bank dependence in Europe's great recession	Hoffmann M Maslov E Sorensen BE
75/2019	Domestic and global uncertainty: A survey and some new results	Castelnuovo E
74/2019	Turning point and oscillatory cycles	Kulish M Pagan A
73/2019	Animal spirits, risk premia and monetary policy at the zero lower bound	Proano CR Lojak B
72/2019	Decreasing substitutability between clean and dirty energy	Wiskich A
71/2019	A comment on innovation in "The environment and directed technical change"	Wiskich A
70/2019	Optimal climate policy with directed technical change, extensive margins and decreasing substitutability between clean and dirty energy	Wiskich A
69/2019	US monetary policy since the 1950s and the changing content of FOMC minutes	Siklos PL
68/2019	A tale of two taxes: State-dependency of tax policy	Arin KP Gahramanov E Omay T Ulubasoglu MA
67/2019	On the transmission channels for the resource curse	Arin KP Braunfels E Zenker C
66/2019	A closer look at the employment effects of fiscal policy shocks: What have minorities got to do with it?	Adnan W Arin KP Corakci A Spagnolo N
65/2019	Weighing cows, geoengineering and coal under a climate tipping risk and a temperature target	Wiskich A

64/2019	The optimal carbon tax with a tipping climate and peak temperature	Wiskich A
63/2019	Transmission of a resource boom: The case of Australia	Dungey M Fry-McKibbin R Volkov V
62/2019	Global factors and trend inflation	Kamber G Wong B
61/2019	Minnesota-type adaptive hierarchical priors for large Bayesian VARs	Chan JCC
60/2019	An investigation of the exchange rate pass-through in the Baltic states	Comunale M
59/2019	The shale oil boom and the US economy: Spillovers and time-varying effects	Bjornland HC Zhulanova J
58/2019	Early 20th century American exceptionalism: Production, trade and diffusion of the automobile	Cheng D Crucini MJ Oh H Yilmazkuday H
57/2019	Did the American recovery and reinvestment act help counties most affected by the great recession?	Crucini MJ Vu NT
56/2019	Supply flexibility in the shale patch: Evidence from North Dakota	Bjornland HC Nordvik FM Rohrer M
55/2019	Dutch disease dynamics reconsidered	Bjornland HC Thorsrud LA Torvik R
54/2019	A short review on the economics of artificial intelligence	Lu Y Zhou Y
53/2019	How resilient is ASEAN-5 to trade shocks? Regional and global shocks compared	Raghavan M Devadason ES
52/2019	House prices post-GFC: More household debt for longer	Day C
51/2019	Asymmetric conjugate priors for large Bayesian VARs	Chan JCC
50/2019	Australian macro-econometric models and their construction - A short history	Pagan A
49/2019	Long-term macroeconomic effects of climate change: A cross-country analysis	Kahn ME Mohaddes K Ng RNC Pesaran MH Raissi M Yang J-C

48/2019	Inflation and monetary policy: What South African newspapers report in an era of policy transparency	Reid M Bergman Z DuPlessis S Bergman MM Siklos PL
47/2019	Empirically-transformed linear opinion pools	Garratt A Henckel T Vahey SP
46/2019	Efficient selection of hyperparameters in large Bayesian VARs using automatic differentiation	Chan JCC Jacobi L Zhu D
45/2019	An automated prior robustness analysis in Bayesian model comparison	Chan JCC Jacobi L Zhu D
44/2019	Monetary policy, inflation target and the great moderation: An empirical investigation	Haque Q
43/2019	Analyzing credit risk transmission to the non- financial sector in Europe: A network approach	Gross C Siklos PL
42/2019	Price discovery in agricultural commodity markets: Do speculators contribute?	Bohl MT Siklos PL Stefan M Wellenreuther C
41/2019	Implications of partial information for econometric modeling of macroeconomic systems	Pagan A Robinson T
40/2019	Can loss aversion shed light on the deflation puzzle?	Lye JN McDonald IM
39/2019	Demographic change, human capital, and economic growth in Korea	Han JS Lee JW
38/2019	Yield curve and financial uncertainty: Evidence based on US data	Castelnuovo E
37/2019	Females, the elderly, and also males: Demographic aging and macroeconomy in Japan	Kitao S Mikoshiba M Takeuchi H
36/2019	Dimensions of inequality in Japan: Distributions of earnings, income and wealth between 1984 and 2014	Kitao S Yamada T
35/2019	US-China rivalry: The macro policy choices	Tyers R Zhou Y
34/2019	Residual shape risk on natural gas market with mixed jump diffusion	Janda K Kourilek J
33/2019	New kid on the block? China vs the US in world oil markets	Cross J Nguyen BH Zhang B

32/2019	On the relationship between domestic saving and the current account: Evidence and theory for developing countries	Brueckner M Paczos W Pappa E
31/2019	Absolute momentum, sustainable withdrawal rates and glidepath investing in US retirement portfolios from 1925	Clare A Seaton J Smith PN Thomas S
30/2019	Changes in the inflation target and the comovement between inflation and the nominal interest rate	Eo Y Lie D
29/2019	Inflation expectations: Review and evidence	Kose MA Matsuoka H Panizza Ugo Vorisek D
28/2019	Why do fiscal multipliers depend on fiscal positions?	Huidrom R Kose MA Lim JL Ohnsorge FL
27/2019	Risk aversion among Australian households	Breunig R Freestone O
26/2019	Stagnation vs singularity: The global implications of alternative productivity growth scenarios	McKibbin WJ Triggs A
25/2019	An analysis of the global oil market using SVARMA models	Raghavan M
24/2019	Global inflation synchronization	Ha J Kose MA Ohnsorge FL
23/2019	A provincial view of consumption risk sharing: Asset classes as shock absorbers	Pontines V
22/2019	Understanding inflation in emerging and developing economies	Ha J Kose MA Ohnsorge FL
21/2019	Macroeconomic time-series evidence that energy efficiency improvements do not save energy	Bruns SB Moneta A Stern D
20/2019	The relationship between fuel and food prices: Methods, outcomes, and lessons for commodity price risk management	Janda K Kristoufek L
19/2019	Large Bayesian vector autoregressions	Chan JCC
18/2019	FinTech and the future of financial services: What are the research gaps?	Kavuri AS Milne A
17/2019	Measuring multi-product banks' market power using the Lerner index	Shaffer S Spierdijk L
16/2019	Role of expectations in a liquidity trap	Hasui K Nakazono Y Teranishi Y

15/2019	Improved methods for combining point forecasts for an asymmetrically distributed variable	Karagedikli O Vahey SP Wakerly EC
14/2019	The Australian real-time fiscal database: A overview and an illustration of its use in analysing planned and realised fiscal policies	Lee K Morley J Shields K Tan MSL
13/2019	Measuring the fiscal multiplier when plans take time to implement	Lee K Morley J Ong K Shields K
12/2019	Money-financed fiscal stimulus: The effects of implementation lag	Tsuruga T Wake S
11/2019	The US-China trade dispute: A macro perspective	Tyers R Zhou Y
10/2019	Uncertainty and sign-dependent effects of oil market shocks	Nguyen BH Okimoto T Tran TD
09/2019	Financial integration and the global effects of China's growth surge	Tyers R Zhou Y
08/2019	Variational Bayesian inference in large vector autoregressions with hierarchical shrinkage	Gefang D Koop G Poon A
07/2019	The gains from catch-up for China and the US: An empirical framework	Dungey M Osborn DR
06/2019	Identifying global and national output and fiscal policy shocks using a GVAR	Chudik A Pesaran MH Mohaddes K
05/2019	The dynamics of health care and growth: A model with physician in dual practice	Alpaslan B Lim KY Song Y
04/2019	Global economic and environmental outcomes of the Paris Agreement	Liu W McKibbin WJ Morris A Wilcoxon PJ
03/2019	Tourist arrivals, energy consumption and pollutant emissions in a developing economy—Implications for sustainable tourism	Irsya MI Nepal R Nepal SK
02/2019	Estimating the impacts of financing support policies towards photovoltaic market in Indonesia: A social-energy-economy-environment (SE3) model simulation	Irsya MI Halog A Nepal R
01/2019	Will the real eigensystem VAR please stand up? A univariate primer	Krippner L

Newsletters

CAMA published six newsletters in 2019. The newsletter is developed through the contribution of the CAMA members and it includes among other things information about new members, projects, awards, publications, interviews, and events. Online copies of the newsletters can be found at the CAMA website (<https://cama.crawford.anu.edu.au/cama-publications/newsletter>).

Other publications

Many CAMA working papers are published in major international journals or edited books. Publications in journals written by the CAMA research associates in 2019 include:

Behavioural Macroeconomics and Complexity program

- Cohen SN, **Henckel T**, **Menzies GD**, Muhle-Karbe J, **Zizzo DJ**, 2019, 'Switching cost models as hypothesis tests'. *Economics Letters*. (CAMA WP 40/2018).
- **Henckel T**, **Menzies G**, Moffatt P and **Zizzo D**, 2019, 'Three dimensions of central bank credibility and inferential expectations: The euro zone'. *Journal of Macroeconomics*.
- **McDonald IM**, 2019, 'The economics of ageing-what do you face?' *Australian Economic Review*, 52, 4, 496-506.
- **McDonald IM**, 2019, 'John Maynard Keynes, Joan Robinson and the prospect theory approach to money wage determination', *Metroeconomica*, 70, 1, 45-67.

Climate Change and Energy program

- Al Irsyad MI, Halog A, **Nepal R**, 2019, 'Estimating the impacts of financing support policies towards photovoltaic market in Indonesia: A social-energy-economy-environment model simulation', *Journal of Environmental Management*, 230 pp. 464-473. ISSN 0301-4797 (CAMA WP 02/2019).
- Al Irsyad MI, **Nepal R**, Nepal SK, 2019, 'Tourist arrivals, energy consumption and pollutant emissions in a developing economy-implications for sustainable tourism', *Tourism Management*, 72 pp. 145-154. ISSN 0261-5177 (CAMA WP 03/2019).
- Best R, **Burke P** and **Jotzo F**, 2019, 'Closures of coal-fired power stations in Australia: Local unemployment effects', *Australian Journal of Agricultural and Resource Economics* 62(1), 142–165.
- **Burke P**, Liao H and Teng M, 2019, 'The demand for coal among China's rural households: Estimates of price and income elasticities', *Energy Economics* 80, 928–936.
- **Burke PJ** and Siyaranamual MD, 2019, 'No one left behind in Indonesia?' *Bulletin of Indonesian Economic Studies* 55(3), 269–293.
- Gregory KB and **Lang PA**, 2019, 'Economic impact of energy consumption change caused by global warming'. *Energies* 2019, 12(18), 3575.
- Halog A, Indra M and **Nepal R**, 2019, 'Renewable energy projections for climate

change mitigation: An analysis of uncertainty and errors', *Renewable Energy*, Vol. 130, pp. 536-546, 2019 (CAMA WP 74/2017).

- **Janda K** and Kristoufek L, 2019, 'The Relationship between fuel and food prices: Methods and outcomes'. *Annual Review of Resource Economics* 2019, vol. 11, pp. 195-216.
- **Nepal R** and Paija N, 2019, 'Energy security, electricity, population and economic growth: The case of a developing South Asian resource-rich economy', *Energy Policy*, 132, (September) pp. 771-781. ISSN 0301-4215.
- **Nepal R** and Paija N, 2019, 'A multivariate time series analysis of energy consumption, real output and pollutant emissions in a developing economy: New evidence from Nepal', *Economic Modelling*.
- Nguyen J and **Valadkhani A**, 2019, 'Long-run effects of disaggregated renewable and non-renewable energy consumption on real output', *Applied Energy*. Accepted 27 August 2019.
- Nguyen J, Smyth R and **Valadkhani A**, 2019, 'Effects of primary energy consumption on CO2 emissions under optimal thresholds: Evidence from sixty countries over the last half century', *Energy Economics*, 80, 680-690.
- Perdana S and **Tyers R**, 2019, 'Global climate change mitigation: strategic incentives', *The Energy Journal* (CAMA WP 10/2018).

Commodities and the Macroeconomy program

- Jarrett U, **Mohaddes K** and Mohtadi H, 2019, 'Oil price volatility, financial institutions and economic growth', *Energy Policy* 126, pp. 131–144.
- **Nguyen BH** and **Tatsuyoshi O**, 2019, 'Asymmetric reactions of the US natural gas market and economic activity'. *Energy Economics* 80, 86-99.

Finance and the Macroeconomy program

- **Arin K**, Caporale GM, Kyriacou K and Spagnolo N (2019) 'Financial Integration in the GCC Region: Market size versus national effects' forthcoming in *Open Economies Review*.
- **Arin K**, Fees E, Kuhlenskasper T and Reich O (2019) 'Negotiating with terrorists: Costs of compliance' *Southern Economic Journal*, 2019, 86(1), 305-317.
- Abeln B, **Jacobs JPAM** and Ouwehand P, 2019, CAMPLET: 'Seasonal adjustment without revisions'. *Journal of Business Cycle Research*. doi.org/10.1007/s41549-018-0031-3.
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countries proceed through stages of economic development', *Energy Policy*.

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- Chiew D, Qiu J, Shi C, **Treepongkaruna S** and Yang J, 2019, 'The predictive ability of the expected utility-entropy based fund rating approach: A comparison investigation with Morningstar ratings in US', *PLOS One*, accepted 11 April 2019.
- Clare A, Seaton J, **Smith PN** and Thomas S, 2019, 'Can sustainable withdrawal rates be enhanced by trend following?' *International Journal of Finance and Economics*.
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- Goldewijk GMK, **Jacobs JPAM**, Jongman WM, 2019, 'Health and wealth in the Roman Empire'. *Economics and Human Biology*. doi.org/10.1016/j.ehb.2019.01.005.
- **Greenwood-Nimmo MJ**, Huang J and Nguyen VH, 2019, 'Financial sector bailouts, sovereign bailouts, and the transfer of credit risk', *Journal of Financial Markets*.
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- Jiraporn P, Jumreornvong S, Prommin P and **Treepongkaruna S**, 2019, 'The effects of ownership concentration and corporate governance on corporate risk-taking: The case of Thailand', *Accounting Research Journal*, accepted 22 April 2019.
- Kang W, Perez de Gracia F, **Ratti RA**, 2019, 'The asymmetric response of gasoline prices to oil price shocks and policy uncertainty', *Energy Economics* 77, 66-79.
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- Laurent S and **Shi S**, 2019, 'Volatility estimation and jump detection for drift-diffusion

processes', *Journal of Econometrics*.

- Lim A, Lan Y and **Treepongkaruna S**, 2019, 'Asset pricing and energy consumption risk', *Accounting and Finance*, accepted 19 May 2019.
- Nguyen J, Smyth R and **Valadkhani A**, 2019, 'Effects of primary energy consumption on CO2 emissions under optimal thresholds: Evidence from sixty countries over the last half century', *Energy Economics*, 80, 680-690.
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- **Okimoto T**, 2019, 'Trend Inflation and Monetary Policy Regimes in Japan'. *Journal of International Money and Finance* 92, 137-152.
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- Phillips PCB and **Shi S**, 2019, 'Detecting financial collapse and ballooning sovereign risk', *Oxford Bulletin of Economics and Statistics*.
- **Pontines V** and Siregar RY, 2019, 'Non-core liabilities and interest rate pass-through: bank-level evidence from Indonesia', *Applied Economics*, Vol. 51, Issue No. 25 (CAMA WP 78/2017).
- **Ratti RA** and **Vespignani J**, 2019, 'What drives global Policy/official interest rate?' *Applied Economics* 51, 5185-5190, 2019.
- **Ratti RA** and **Vespignani J**, 2019, 'Impact of Global Uncertainty on the Global Economy and Large Developed and Developing Economies', *Applied Economics*.
- **Ravazzolo F** and **Vespignani J**, 2019, 'World Steel Production: a new indicator of monthly real economic activity', *Canadian Journal of Economics*.

Growth, Demographics and Productivity program

- Breunig R and Majeed O, 2019, 'Inequality, poverty and economic growth', *International Economics*. doi.org/10.1016/j.inteco.2019.11.005 (CAMA WP 43/2016)
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Macroeconomic Policy Frameworks program

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- Gunarsa S, **Makin A** and Rohde N, 2019, 'Public debt in Asia: A help or hindrance to growth?' *Applied Economics Letters*.
- **Hall VB** and McDermott CJ (2019), 'Changes in New Zealand's business insolvency rates after the GFC', *New Zealand Economic Papers*, published online 18 December 2019, <https://doi.org/10.1080/00779954.2019.1703792>.
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- **Kim J** and Ruge-Murcia F, 2019, "Extreme events and optimal monetary policy". *International Economic Review*, 60: 939-963. doi:10.1111/iere.12372.
- **Libich J**, 2019, 'Unpleasant Monetarist Arithmetic: Macroprudential edition', *Economic Record*.
- **Makin A**, 2019, 'Lessons for macroeconomic policy from the global financial crisis', *Economic Analysis and Policy*.
- **Makin A**, Pearce J and Ratnasiri S, 2019, 'The optimal size of government in Australia' *Economic Analysis and Policy* 62, 27-36.
- **Miranda-Pinto J** and Shen Y, 2019, 'A granular view of the Australian business cycle'. *Economic Records*. doi:10.1111/1475-4932.12495.
- Oikawa K and **Ueda K**, 'Short- and long-run tradeoff of monetary easing', *Journal of the Japanese and International Economies*, 52, 189-200, 2019.
- **Ueda K**, Watanabe K, and Watanabe T, 'Product turnover and the cost of living index: Quality vs. fashion effects', *American Economic Journal: Macroeconomics*, 11(2), 310-347, 2019.

Macroeconomic Theory program

- **Miranda-Pinto J** and Young ER, 2019, 'Comparing dynamic multisector models', *Economics Letters*, Volume 181, 2019, Pages 28-32.

Model Uncertainty and Macro-Econometrics program

- Albonico A, **Paccagnini A** and Tirelli P, 2019, 'Limited asset market participation and the Euro area crisis. An empirical DSGE model', *Economic Inquiry*.
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- **Eo Y** and Kang KH, 'The effects of conventional and unconventional monetary policy on forecasting the yield curve', *Journal of Economic Dynamics and Control*.
- Garratt A, **Vahey SP**, Zhang Y, 2019, 'Real-time forecast combinations for the oil price'. *Journal of Applied Econometrics* (CAMA WP 38/2018).
- Mamertino M and **Sinclair T**, 'Migration and online job search: A gravity model approach', *Economics Letters*, Volume 181, August 2019, Pages 51-53.
- Masolo RM and **Paccagnini A**, 2019, 'Identifying Noise Shocks: a VAR with Data Revisions', *Journal of Money, Credit and Banking*.
- **Morley J** and **Wong B**, 2019, 'Estimating and accounting for the output gap with large Bayesian vector autoregressions', *Journal of Applied Econometrics* (CAMA WP 46/2017).
- **Paccagnini A**, 2019, Did financial factors matter during the Great Recession? *Economics Letters*, Volume 174, January 2019, Pages 26-30.
- **Sinclair T**, 2019, Characteristics and implications of Chinese macroeconomic data revisions on 'Forecasting Issues in Developing Economies' in the *International Journal of Forecasting*.

Multi-Country Models and Methods program

- Asano A and **Tyers R**, 2019, 'Japan's oligopolies: potential economy-wide gains from structural reforms', *Economic Modelling*.
- **Fujiwara I**, Kam T and Sunakawa T, 2019, 'Sustainable international monetary policy cooperation', *Journal of Economic Dynamics and Control*, Volume 106, 103721, ISSN 0165-1889, doi.org/10.1016/j.jedc.2019.103721.
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Open Economy Macroeconomics program

- Benedict C, **Crucini MJ** and Landry A, 2019, 'On what states do prices depend?' *Answers from Ecuador* (CAMA WP 51 /2016).
- **Comunale M**, 2019, 'Long-run determinants and misalignments of the real effective exchange rate in the EU', *Scottish Journal of Political Economy*, vol.66, issue 5, Pages

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- **Crucini MJ** and Landry A, 2019, 'Accounting for real exchange rates using micro-data', *Journal of International Money and Finance*, March 2019, Vol. 91, 86-100.
- **Hoffmann M** and Stewen I, 'Holes in the dike: The global savings glut, U.S. house prices and the long shadow of banking deregulation', *Journal of the European Economic Association* (CAMA WP 06/2016).
- **Jacob P**, Uuskula L, 'Deep habits and exchange rate pass-through', *Journal of Economic Dynamics and Control* (CAMA WP 17/2016).
- Shibata A, Shintani M and **Tsuruga T**, 2019, 'Current account dynamics under information rigidity and imperfect capital mobility', *Journal of International Money and Finance*, Volume 92, April 2019, Pages 153-176.
- Smith C and **Thoenissen C**, 2019, 'Skilled migration and business cycle dynamics', *Journal of Economic Dynamics and Control*, 109 (CAMA WP 20,2018).
- **Tsuruga T** and Wake S, 2019, 'Money-financed fiscal stimulus: The effects of implementation lag', *Journal of Economic Dynamics and Control*.

Book and book chapter

Publications in academic books include:

Commodities and the Macroeconomy program

- **Kamiar Mohaddes**, Jeffrey B. Nugent, and Hoda Selim (eds.), *Institutions and macroeconomic policies in resource-rich Arab economies*, Oxford University Press.
- El-Anshasy A, **Mohaddes K**, and Nugent JB, 'Oil, volatility and institutions: Cross-country evidence from major oil producers' in Kamiar Mohaddes, Jeffrey B. Nugent, and Hoda Selim (eds.), *Institutions and macroeconomic policies in resource-rich Arab economies*, Oxford University Press.
- **Mohaddes K**, Nugent JB, and Selim S, 'Objectives, issues, and findings' in Kamiar Mohaddes, Jeffrey B. Nugent, and Hoda Selim (eds.), *Institutions and macroeconomic policies in resource-rich Arab economies*, Oxford University Press.
- **Mohaddes K**, Nugent JB, and Selim S, 'Reforming fiscal institutions in resource-rich Arab economies: Policy proposals' in Kamiar Mohaddes, Jeffrey B. Nugent, and Hoda Selim (eds.), *Institutions and macroeconomic policies in resource-rich Arab economies*, Oxford University Press.

Finance and the Macroeconomy program

- **Kose MA** and Ohnsorge F, 2019, *A decade after the global recession: Lessons and challenges for emerging and developing economies*. Washington, DC: World Bank.

Globalisation and Trade program

- **Akhtaruzzaman M**, 2019, *International capital flows and the Lucas Paradox - Patterns, determinants, and debates*, Springer. doi.org/10.1007/978-981-13-9069-2.

Macroeconomic Policy Frameworks program

- Froyen RT and **Guender AV** eds., 2019. *Optimal monetary policy under uncertainty*. Edward Elgar Publishing.

Media

In 2019, the CAMA affiliates contributed to the public debate participating in interviews with media including the *Australian Financial Review*, *The Australian*, *The Business*, and others.

Some articles published in 2019 include:

- Weifeng Liu, Warwick McKibbin, Adele Morris, and Peter J Wilcoxon, 'Global economic and environmental outcomes of the Paris Agreement', *The Brookings Institution*, 7 January
- Paul Burke, Frank Jotzo and Rohan Best, 'Bad news. Closing coal-fired power stations costs jobs. We need to prepare', *The Conversation*, 29 March
- Warwick McKibbin, 'Policy matters more than targets', *Australian Financial Review*, 23 April
- Timo Henckel, 'Housing bubble week: A philosophy of bubbles', *The Jolly Wagmen*, 19 May
- Warwick McKibbin, 'PM must focus on incentives for people to invest and work hard: Warwick McKibbin', *ABC News*, 22 May
- Warwick McKibbin, 'This is why Australia's macroeconomic policies needs a shakeup. Fast', *Australian Financial Review*, 7 June.
- Warwick McKibbin, 'Interview about the RBA decision in July', *The Business – ABC News*, 3 July.
- Andrew Leigh, 'A progressive agenda for tackling Australia's productivity crisis', *Inside Story*, 28 July
- Warwick McKibbin, 'Tweeting the world into a slump', *Australian Financial Review*, 9 August
- Warwick McKibbin, 'Economic 'uncertainty is rising sharply'', *Sky News Australia*, 11 August 2019
- Timo Henckel, 'Economy softening but 28 recession-free run not over yet', *ABC RADIO News and Current Affairs*, 2 September 2019
- Warwick McKibbin, 'GFC lessons forgotten, says McKibbin', *Australian Financial Review*, 16 September 2019

- Bruce Preston and Warwick McKibbin, 'We must not politicise the RBA', *Australian Financial Review*, 19 September 2019
- Warwick McKibbin, 'IMF downgrades Australia's economic growth', *2GB*, 17 October 2019
- Robert Breunig and Warwick McKibbin, 'Good policy needs good data. So why is it locked up?' *Australian Financial Review*, 28 October 2019

CAMA participated on Twitter (@CAMacroAnalysis) and 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 2019 include:

- McKibbin W, [The theory that's too good to be true?](#), 15 March
- McKibbin W, [How should technocrats count the true costs of cooling the climate?](#) 31 March
- McKibbin W, [Policy matters more than targets](#), 24 April
- Ahrens J, Allen L, Burke P, Henson H, McKibbin W, Cotton B and Grafton Q, [Podcast: The Auspolicy issue – what the country voted for](#), 24 May
- McKibbin W, [Tweeting the world into a slump](#), 12 August
- Preston B and McKibbin W, [We must not politicise the RBA](#), 20 September
- Breunig R and McKibbin W, [Good policy needs good data](#), 7 November

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 sponsored by the Organisation for Economic Cooperation and Development (OECD) in Paris.

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

In 2019, the public lectures presented by CAMA were audio recorded. These podcasts can be found at <https://cama.crawford.anu.edu.au/news-events/podcasts/audio>

Workshops and conferences

Disruption and development: Alternative futures of the global economy

4 to 5 February 2019

The Brookings Institution, Washington DC

Various speakers

NBER EASE 30 conference on international trade

6-7 June 2019

Bangkok, Thailand

Various speakers

CAMA sponsored this event.

Sheffield workshop in macroeconomics

20 June 2019

The University of Sheffield - UK

Various speakers

CAMA sponsored this event.

The global economic implications of population aging

26-27 August 2019

The Australian National University

Various speakers

CIS's annual Consilium conference: The new financial landscape - What should be the target of central banks in a disrupted world?

29 August – 1 September 2019

Byron Bay, NSW

Warwick McKibbin, CAMA

Melbourne Institute macroeconomic policy meetings

10-11 October 2019

University of Melbourne

Various speakers

CAMA sponsored this event.

CAMA and CAMP (Centre for Applied Macroeconomics and Commodity Prices) joint conference

International economic flows: Energy, finance, diplomacy and market structures

28 November 2019

Sydney

Various speakers

This conference was sponsored by the Reserve Bank of Australia

Climate, macroeconomics and monetary policy

3 June 2019

Norway

Warwick McKibbin (CAMA), Ragnar Torvik (NTNU) and Hilde C Bjornland (CAMA and CAMP)

CAMA and UNSW joint conference

Data linkage workshop

10 April 2019

The Australian National University

Various speakers

Policy dialogue on housing and ageing

18 November 2019

The Australian National University

Various speakers

Other conferences

11th Annual Conference by Banco Central de Reserva del Perú and the Reinventing Bretton Woods Committee

18-19 July 2019

Cusco, Perú

Speakers: Warwick McKibbin (ANU) and others

5th Workshop of the Australasian Macroeconomics Society

5-7 December 2019

Hobart - Tasmania

Keynote speakers: Professor Randall Wright (University of Wisconsin, Madison), Professor Renee Fry-McKibbin (ANU) and Professor Adrian Pagan (University of Sydney).

Public lectures

Harry Johnson's 'case for flexible exchange rates' – 50 years on

20 May 2019

The Australian National University

Maury Obstfeld, University of California – Berkeley

In 1969, Harry G. Johnson, professor at the University of Chicago and London School of Economics, published a polemical brief in favor of exchange-rate flexibility, "The Case for Flexible Exchange Rates, 1969." Johnson's title alluded to Milton Friedman's celebrated original essay (written in 1950), which advocated floating exchange rates as a way to break the convertibility logjam then impeding the liberalization of world trade and payments. While the Bretton Woods system had worked reasonably well in restoring the global economy in the 1950s and 1960s, by the late 1960s it was facing evident strains, strains being felt especially acutely in the United Kingdom after the 1967 sterling devaluation. Within four years of Johnson's essay, those strains had pushed the industrial economies to a network of floating rates. Notwithstanding the durability of the resulting "non-system," the economics profession continues to study the efficacy of exchange-rate flexibility. This lecture evaluated the nearly five decades of exchange-rate flexibility since 1973 through the prism of both Johnson's claims and economists' theories.

The revival of research on monetary policy rules: facts and future directions

28 August 2019

The Australian National University

John Taylor, Stanford University

Policy rules were the subject of much research in the 1970's, 1980's and 1990's, but in the following years, until recently, there was a lull. Now there's a big pickup, whether at conferences, in research papers, or in central bank publications, including whole new sections on rules in comparison with actual policy.

This lecture documented these developments, and offered possible explanations, including revealed preference by policymakers, the need to deal with the effective lower bound on the interest rate, disappointment with monetary policy in some countries leading to the global financial crisis, threats of legislation, and concerns about people kibitzing about policy without a monetary framework.

The talk examined key features of the revival, including that rules were usually stated in terms of policy instruments, rather than 'forecast targeting'. It also examined implications for research and policy going forward. There was a great need in this revival for more robustness studies and for international monetary policy evaluation.

Seminars

Impact of demographic change on macroeconomic and environmental outcomes

23 January 2019

ANU

Tsendsuren Batsuuri, PhD student at CAMA and CEPAR

The world is experiencing unprecedented demographic changes. These shifts in the population growth rate and age structure are affecting the global economy from both the supply and demand side.

With its far reaching impacts on all aspects of the economy, demographic change and its asymmetry across countries raise an important question about the effects on global carbon emissions. In a policy environment where fair and equitable emissions reductions are crucial to increasing ambition on climate action, demographic change and its asymmetry between countries will affect baseline emissions projections and complicate efforts to compare country efforts.

In this seminar, Tsendsuren Batsuuri presented an overview of her PhD dissertation proposal which will comprise of four papers around these issues. In her first paper, Tsendsuren developed a tractable, two country, two sector theoretical model with overlapping generations of households to understand how demographic change and its asymmetry among countries is likely to affect global carbon emissions.

In her second paper, she incorporated fiscal policy into her theoretical framework to show how different institutions and policies aggravate or mitigate emissions consequences of demographic change, such as pension and other fiscal reforms that are being discussed in conjunction with population aging policies. This part of the research was useful in directing attention to synchronisation of policy solutions for population ageing and climate change.

In her third paper, she tested her theoretical framework against empirical data by incorporating implications from her theoretical framework into existing econometric models to analyse global patterns of carbon emissions in the face of asymmetric demographic change.

In her fourth paper, she embedded her theoretical framework into G-cubed model, a dynamic intertemporal general equilibrium model of the global economy, to project how ongoing demographic change in the world, and particularly in Asia, is going to affect carbon emissions at the global and country level.

Climatic disruptions and output gaps: should central banks incorporate climate effects into policy?

24 January 2019

ANU

Augustus Panton, PhD student, CAMA

The output gap—the deviation of actual output from potential—is a key input into macroeconomic policy decisions, from examining fiscal sustainability to determining the monetary policy stance. For a flexible inflation-targeting central bank for which the monetary policy reaction function includes both price and output stability goals, the policy signal for accommodating output stability depends on the output gap and the evolution of inflation. When the output gap is negative, a loose monetary policy stance is warranted. Conversely, for a positive output gap, a tight monetary policy stance aimed at taming inflation may be optimal. However, real-time output gap estimates are grossly inaccurate and unreliable for policy, largely due to the constant changing output and price dynamics. With climatic disruptions found to have stronger and more permanent negative effects on output (and the economy as a whole) than previously thought, frequent episodes of climate disasters may induce structural changes in the economy that weaken the relationship between inflation and output dynamics, further complicating the task of distinguishing signal from noise in the estimation of potential output.

Using mean temperature and precipitation ‘anomalies’ as proxies for climatic variations over time in selected countries, Augustus Panton employed a multivariate filtering model estimated by the data-driven Maximum Likelihood technique in the state-space context to derive climate-neutral measures of potential output and output gaps. The results showed that potential output and output gap measures that are adjusted for climatic disruptions were more accurate in real time than those obtained from conventional approaches that do not take climate effects into consideration.

Hysteresis and the Australian economy

4 April 2019

ANU

Timothy Watson, PhD Student, CAMA

In this seminar Timothy Watson presented his thesis proposal review on ‘Hysteresis and the Australian Economy’.

Timothy’s PhD research investigated output and unemployment fiscal multipliers in Australia, and how these vary based on capacity utilisation and whether fiscal policy is conducted on a counter or pro cyclical basis. It also explored cross-country evidence concerning how multipliers differ based on the above factors and also with reference to differences in exchange rate regimes, openness, government and private debt, and monetary policy settings. Based on these results, he explored what new features need to be incorporated into macroeconomic models of the Australian economy to reflect the empirical regularities observed, providing new insights into the optimal conduct of macroeconomic policy.

Using macroeconomic theory for macroeconomic policymaking: Understanding Australia's successful experience from the 1920s to the end of the 20th century.

17 April 2019

ANU

Professor David Vines, University of Oxford

Why is macroeconomic policymaking in Australia generally seen as successful by observers in the rest of the world? Professor David Vines explored the radical shift in thinking about open- economy macroeconomics which has taken place in Australia between the 1920s and the present. This story began with an economy on the gold standard, with a protectionist trade policy, and with centralised wage fixing; an analysis of this process was set out in the Brigden Report of 1929. This led by the late 1940s, to a Keynesian policy in pursuit of all of full employment, price stability and external balance by means of fiscal policy, centralised wage fixing and the pursuit of external competitiveness by means of protectionism or exchange rate adjustment. That set of ideas was formalised in the 1950s by Trevor Swan and others at the ANU. Economic growth was to be pursued through migration accompanied by sufficient savings; Swan's growth model showed how this might be done. Analytical thinking, and policymaking, moved away from both protectionism and centralised wage fixing from the 1970s to the 1990s, towards the present system of inflation targeting, in which the exchange rate is floating, and fiscal policy is governed by the need to ensure sufficient national savings. The seminar described how the moves took place from one set of ideas to another, and aimed to show how this made good policymaking possible. In doing this, Professor Vines presented an outline of a book which he was writing on the development of macroeconomic analysis in Australia, focusing on Australia's position as a small open economy and on the reasons why macroeconomic policymaking in Australia has been successful.

Interaction between interest rate, credit and asset prices

18 April 2019

ANU

Daniel Silva Withmory, PhD Student, CAMA

In this seminar, Daniel Silva Withmory presented his paper that assessed the interaction between monetary policy, credit and asset prices in Australia, using a FAVAR approach. Two assets prices were considered: share and housing prices. The results provided quantitative estimates of the effect of changes in the cash rate on asset prices and the collateral effects of this policy on other economic variables such as GDP, prices, consumption and employment. The paper also presented results on the different responses of housing and share prices to a credit shock. This study also found a statistically significant positive response of credit and consumption to an increase in asset prices.

Uncertainty and sign-dependent effects of oil market shocks

14 May 2019

ANU

Tatsuyoshi Okimoto, Crawford School of Public Policy, ANU

This seminar investigated the oil market reaction to its fundamental shocks in different regimes characterised by uncertainty in the market. The author first proposed a novel oil uncertainty index that is measured by the conditional volatility of the unpredictable component of oil prices. Then, the author employed a nonlinear model to show that both supply and oil-specific demand shocks had negligible impacts in low oil price uncertainty regime but sizable effects in high oil price uncertainty regime. He also found that the effects of oil supply shocks on real economy are asymmetric, but oil specific demand shocks are not.

Tipping, the optimal carbon price and weighing cows and coal

15 May 2019

ANU

Tony Wiskich, PhD Student, CAMA

This seminar covered two papers. The first paper was on the optimal carbon tax with an endogenous chance of a tipping climate. The paper described an integrated assessment model with an unknown climate tipping temperature threshold. Although tipping could occur in any period where temperature rises to a new maximum, the optimal carbon price could be calculated from temperature outcomes conditional on no tipping. The author found that the endogenous hazard rate led to a prolonged period of peak temperature, tied with a rebound in emissions as the tax ratio falls. Learning that tipping had not occurred lowered the tax.

The second paper was on optimal taxes for methane and carbon from a tipping risk. According to the author, different optimal tax paths for short-lived methane and long-lived carbon arose in a cost benefit framework with an unknown climate tipping temperature threshold. Tax paths were compared with a cost-minimising approach where an upper temperature limit was set. In both approaches, the ratio of methane to carbon taxes converged to the same value by the end of the peak temperature stabilisation period. The author found that a simple adjustment of GWP so that the time frame aligned with the expected end of peak temperature went most of the way to replicating the optimal relative weights of carbon and methane under cost benefit.

Some effects of a decreasing elasticity of substitution between clean and dirty energy on optimal climate policy

23 May 2019

ANU

Tony Wiskich, PhD Student, CAMA

Using a climate model with endogenous technology, this seminar investigated the implications of a decreasing elasticity of substitution between clean and dirty energy as the share of clean energy rises. Both taxes and subsidies were needed for optimum policy. A decreasing elasticity increases the initial optimal tax on dirty energy and marginally lowers subsidies required to direct technical change towards clean energy. In the presence of a carbon tax, consumption can decrease as clean productivity rises, and a drop in elasticity can boost consumption. When subsidies have a distortionary cost, optimal taxes are increased by an amount proportional to the cost and roughly independent of the elasticity of substitution and the relative productivities of clean and dirty technologies.

A decreasing elasticity of substitution between clean and dirty energy

5 June 2019

ANU

Tony Wiskich, PhD Student, CAMA

In this seminar Tony Wiskich presented his paper on ‘A decreasing elasticity of substitution between clean and dirty energy’.

The literature indicated a decreasing long-run elasticity of substitution between clean and dirty inputs as the share of clean inputs raised. A simple structural model of electricity generation demonstrated this characteristic, can replicate the range of results from the literature, considers the effects of storage, and facilitates estimation of a suitable production function. A bimodal production with two elasticity regimes presented by the author- an elasticity above 8 up to 50 to 70 per cent clean share and an elasticity below 3 beyond this share – can replicate results well from the structural model.

Inflation targeting and financial stability in an open economy

28 June 2019

ANU

Augustus Panton, PhD Student, CAMA

In this seminar, Augustus Panton presented his paper on ‘Leaning against the wind via finance-neutral output gaps: Inflation targeting and financial stability in an open economy’. In the wake of the global financial crisis (GFC), the debate on the role of monetary policy in promoting and sustaining financial stability has intensified, with a strong reawakening of the view that monetary policy must pre-emptively lean against the wind (LAW) of asset price bubbles — tighten the policy stance more than would be conventionally required, to prevent incipient asset price bubbles from materializing into financial crises. By ensuring that output gap measures are neutral to domestic financial cycle imbalances, there is growing evidence that monetary policy can promote the traditional objectives of price and output stability without compromising financial stability. In examining the use of finance-neutral output gaps as an approach to following the concept of LAW, the paper

presented in this seminar departed from the existing literature in a non-trivial way. Instead of restricting financial stability risks to imbalances only in the domestic financial system, external financial stability risks were modelled within a Bayesian state-space dynamic factor framework along with country-specific and external business cycles. The open-economy output gaps derived from the framework were then decomposed into domestic and external finance-neutral components.

Incorporating the finance-neutral output gaps into simple Henderson-McKibbin-Taylor type monetary policy rules, counterfactual policy simulations showed that had monetary policy followed the LAW concept in the period leading to the GFC, policy rates would not have been lower for longer, with the possibility of preventing the GFC or limiting its severity.

The impact of China's emergence on Taiwan's economy

1 August 2019

ANU

Kai-Yun Tsai, PhD Student, CAMA

As China's economy grows and vertical specialisation rises in Asia, the question of how and to what extent China influences other Asian economies through this specific trade channel is of interest to researchers. Given the high degree global value chain participation and trade integration with China, Taiwan serves as a good case to examine this question. Particularly since 2001 the Taiwanese government allowed direct trade and investment in China, and this transition provides a natural experiment to investigate the importance of Chinese influence on Taiwan.

The study presented in this seminar adopted a VAR model with block exogeneity, which considered the US GDP and China's GDP as foreign output disturbances, to investigate the question. The paper found that China's influence is increasing. After 2001, China is influential on the fluctuations in Taiwan's GDP and its real exchange rate, while the US dominates the decision of Taiwan's central bank. China's positive shock results in a positive response of Taiwan's GDP while causing an adverse effect on Taiwan's real exchange rate. Regarding vertical specialisation, the results showed that China's economic growth stimulates the demand for intermediates from its neighbours, while these intermediates producers provide their goods at lower prices.

Risk-sensitive preferences and age-dependent risk aversion

7 August 2019

ANU

Phitawat Poonpolkul, PhD Student, CAMA

The paper presented in this seminar investigated the macroeconomic implications of demographic changes when households have age-dependent increasing risk aversion in future utility. Specifically, the paper incorporated age-dependent increasing risk aversion and monotonic risk-sensitive preferences used in Hansen & Sargent (1995) into a 12-

generation discrete-time OLG model with undiversifiable income risk. The result was contrasted with time-additive preferences to provide insights into the behaviour of life-cycle and aggregate macroeconomic variables.

This study showed that age-dependent risk aversion changes the dynamics of the OLG model, which can be explained by varying degrees of amplification between the effects of reweighting of cohorts and life-cycle redistribution. When compared to the case of time-additive preferences, the amplification of risk-sensitive preferences dampens adverse reactions while strengthening positive responses of aggregate macroeconomic variables including savings, consumption, labour supply, and output under a population expansion scenario. By symmetry, the opposite was true for an ageing population scenario. The result found by the study also suggested a significant difference in welfare impacts as risk-sensitive agents taken into account future uncertainties when they measure welfare changes. In particular, when the population is growing, the result suggested that risk-sensitive household welfare improves more during the initial transition but less in the medium-to-long run due to the dynamics of future uncertainties.

Taiwan's terms of trade from 1989 to 2017

14 August 2019

ANU

Kai-Yun Tsai, PhD Student, CAMA

The paper presented in this seminar examined the determinants of Taiwan's terms of trade over the last three decades. The Prebisch-Singer hypothesis and Kaplinsky and Santos-Paulino (2005) suggest that a manufacturing-based economy, which primarily exports high-tech goods, should have an increasing trend in its terms of trade. However, as a major exporter of information and communication technology (ICT) goods, Taiwan has experienced a downward terms of trade in the last few decades.

Taiwan's exports and imports are both dominated by ICT goods, but the price of ICT products dominates the trends in export prices while the price of commodity goods dominates the movement of the import price. These determinants result in a descending trend in Taiwan's terms of trade. A shift-share analysis shows that the fluctuations in Taiwan's terms of trade mainly arise from changes in the prices and shares of commodity and ICT goods.

This study also investigated the influence of China on Taiwan's terms of trade. China's strong demand for commodity goods increases commodity prices, while China's improvements in technological capacity enable China to compete with Japan, Korea, and Taiwan over ICT intermediate goods. This competition results in falling prices for ICT products. These trends in commodity prices and ICT goods consequently lead to the trend deterioration in Taiwan's terms of trade.

The dynamics of technology and hours worked

26 September 2019

ANU

Daniel Silva, PhD Student, CAMA

In this seminar, Daniel Silva Withmory presented his paper that analysed the responses of output and hours worked to shocks that have permanent and transitory effects on output. The paper used an SVAR model with long-run restrictions and Australian data from 1978 to 2017. As in Blanchard and Quah (1989), the paper interpreted the first type of shocks as a supply disturbance and the second type of shocks as a demand disturbance. The supply disturbance takes the form of a neutral technology shock and is later extended to include an investment-specific technology shock. Hours worked were decomposed into average hours worked and employment. This decomposition allowed the analysis of the effects of unanticipated and anticipated temporary demand shocks associated with shocks to average hours and employment, respectively.

De facto bank bailouts

3 October 2019

ANU

Phong Ngo, Research School of Finance, Actuarial Studies and Statistics, ANU

The study showed that the likelihood a defaulting sovereign is granted an IMF loan is increasing with US banks' exposures to its country. The authors argued the US government uses its voting power in the IMF to direct IMF funds to countries where US banks stand to lose the most from sovereign default – a de facto bailout. Consistent with this, they showed that (1) US Congressional voting on IMF funding increases is consistent with special (banking) interests; and (2) US bank stocks' market reaction to the announcement of an IMF loan increases with its exposure to the defaulting sovereign.

Overinvestment and uncertainty: Evidence from renewable and non-renewable resource firms

24 October 2019

ANU

Denny Irawan, PhD Student, CAMA

This study examined the tendency of resource firms to overinvest induced by business cycles and uncertainties. The analysis was conducted using unbalanced panel data of 596 resource companies in 32 countries between 1986 and 2017 in four resource sectors: (1) alternative energy; (2) forestry and paper; (3) mining; and (4) oil and gas producers. The overall results suggested a positive uncertainty-overinvestment relationship. We also found that commodity price inflation is more important than commodity price uncertainty in

inducing firms to overinvest. In addition, the author found that the home country business cycle is more prominent than the world business cycle in affecting firms' tendency to overinvest.

IMF world economic outlook - October 2019

22 November 2019

ANU

Malhar Nabar, International Monetary Fund

The presentation of the IMF's October 2019 World Economic Outlook publication 'Global Manufacturing Downturn, Rising Trade Barriers' covered the Fund's latest analysis on global growth prospects, risks, and policy priorities. Global growth was forecasted at 3.0 per cent for 2019, its lowest level since 2008–09, picking up to 3.4 per cent in 2020. This reflected a projected improvement in economic performance in a number of emerging markets in Latin America, the Middle East, and emerging and developing Europe that are under macroeconomic strain. Yet, with uncertainty about prospects for several of these countries, a projected slowdown in China and the United States, and prominent downside risks, a much more subdued pace of global activity could well materialise.

Investigating the drivers of international comovement in real financial asset returns

26 November 2019

ANU

Kate McKinnon, PhD Student, CAMA

There is a substantial body of theoretical and empirical research on asset price comovement and determinants. The empirical analysis presented in this seminar differs in that it incorporates a channel for cross country comovement in asset prices, as well in a set of proposed asset price determinants, across a sample of nine OECD countries. A Bayesian dynamic factor model is utilised to isolate common, or 'world', and country specific shocks in stock, bond, currency, and house markets and in variables representing monetary policy, fiscal policy, productivity, demand, relative commodity prices and macroeconomic sentiment. The results found by the author are used to gauge the degree of financial and economic integration. Individual asset returns are then regressed on factors extracted from the driving variables to examine the relative importance of the common and country shocks. Stock and bond markets in particular are found to be driven largely by shocks which are common across all countries and asset markets, though a country-level cycle in returns is also evident.

Together the world factors in the driving variables are found to be a relatively large source of shocks for all asset markets, with shocks to fiscal policy variables, productivity and sentiment appearing to underpin international linkages in asset return volatility. The country-specific component in relative commodity price growth is a large driving force for individual returns.

Welfare multiplier of public investment

4 December 2019

ANU

Juha Tervala, University of Helsinki, Finland

In this seminar Juha Tervala analysed the welfare multipliers of public spending — the consumption equivalent change in welfare for a one dollar change in public spending — in a DSGE model. The welfare multiplier of public investment depends crucially not only on the productivity (output elasticity) of public capital, as shown by earlier studies, but also on the depreciation rate of public capital and the efficiency of public investment defined as a fraction of public investment spending that translates into the public capital stock.

Dr Tervala showed that when the key parameter values are set based on the empirical estimates for advanced economies and the output multipliers are consistent with the empirical estimates, the welfare multiplier is positive and sizable. The welfare multiplier is roughly zero when the key parameter values are set to match the features of developing economies. Dr Tervala concluded that a public infrastructure push in advanced economies makes sense, but developing economies should enhance the efficiency and/or productivity of public investment.

International conferences and seminars

Stagnation vs singularity: The global implications of alternative productivity growth scenarios

22 February 2019

The World Bank

Warwick McKibbin, CAMA

Productivity growth has flat-lined in most economies despite rapid advances in technology. Economists suggest competing explanations for this paradox. Some argue the current stagnation will persist given deep structural challenges, arguing that recent technological advances are no match for those of the past. Others argue that the historical time-lag between technological advances and increased productivity means a productivity surge is just around the corner. This seminar explored the implications of alternative productivity growth scenarios for the global economy, particularly for growth, labor markets and the flows of trade and capital, and what it means for policymakers.

Global economic and environmental outcomes of the Paris agreement

26 March 2019

International Monetary Fund

Warwick McKibbin, CAMA

In this paper Prof McKibbin uses a multi-region model of the world economy to analyze the economic and environmental outcomes that are likely to result from the Paris Agreement. He found that if all regions achieve their Nationally Determined Contributions (NDCs), the Paris Agreement significantly reduces CO2 emissions relative to baseline. However, the Paris policy scenario suggested that global CO2 emissions would not decline in absolute terms relative to 2015 levels, let alone follow a path consistent with a 2°C stabilization scenario. Comparing projected 2030 CO2 tax rates to the same year's percent emissions abatement relative to baseline, he found that declines in CO2 emissions do not necessarily correlate with the CO2 tax rate. The Paris policies result in significant macroeconomic spillovers across the global economy, meaning that macroeconomic outcomes across countries depend not only on their own commitments but also on those of the rest of the world. He also explored how outcomes could change if select countries (United States, China and Australia) unilaterally withdraw from the agreement and undertake no new climate policies. The author found that non-participation leads to economic gains (in terms of GDP) for these countries relative to participating, illustrating the challenge of forging an international agreement with participation by all major emitters and fossil fuel producers. However, if we account for the monetized climate and domestic co-benefits of emissions reductions, those countries, including Australia, are worse off if they unilaterally withdraw from the Paris Agreement than if they participate. Thus, although there are gross costs to participating, doing so generates net benefits for the individual country participants.

Network for greening the financial system

10 October 2019

Paris

Warwick McKibbin, CAMA (by videoconference)

Mitigating climate change

11 December 2019

International Monetary Fund

Warwick McKibbin, CAMA

Joint seminars

CAMA and Strategic & Defence Studies Centre joint seminar

The wealth effect: How the great expectations of the middle class have changed the politics of banking crises

29 July 2019

The Australian National University

Speakers: Andrew Walter (University of Melbourne) and Jeffrey M Chwioroth (London School of Economics)

Hosts: Professor Evelyn Goh (Strategic and Defence Studies Centre, Coral Bell School, ANU), Dr Adam Triggs (Asian Bureau of Economic Research and Research Fellow, Crawford School, ANU) and Professor Warwick McKibbin (Centre for Applied Macroeconomic Analysis, Crawford School, ANU)

In this book launch seminar, Jeffrey Chwioroth and Andrew Walter explained how mass political demand has contributed to rising financial fragility and political instability and discontent in contemporary democracies. In their new book, *The Wealth Effect* (Cambridge University Press, 2019), Chwioroth and Walter use extensive historical and contemporary evidence to demonstrate that the politics of major banking crises have been transformed by the ‘wealth effect’: rising middle class wealth has generated ‘great expectations’ regarding government responsibilities for the protection of this wealth. They showed that crisis policy interventions have become more extensive and costly – and their political aftermaths far more fraught – because of democratic governance, not in spite of it. Using data from a large number of democracies over two centuries, and detailed longitudinal studies of Brazil, the United Kingdom and the United States, the book broke new ground in exploring the consequences of the emergence of mass political demand for financial stabilisation.

Staff and Associates

Director



Professor Warwick McKibbin, AO is Professor of Public Policy and Director of the Centre for Applied Macroeconomic Analysis (CAMA) in the 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" and made an Officer of the Order of Australia in 2016.

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 Wilcoxon 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*.

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Benjamin Wong	Reserve Bank of New Zealand	Model Uncertainty and Macro-Econometrics

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Kate McKinnon	The Australian National University	Commodities and the Macroeconomy program
Thuong Nguyen	The Australian National University	Growth, Demographics and Productivity program
Fajar Okiyanto	The Australian National University	Multi-Country Models and Methods program
Augustus Jablou Pantou	The Australian National University	Finance and the Macroeconomy program, and Macroeconomic Policy Frameworks program

Name	Institution	Program
Christopher Perks	The Australian National University	Macroeconomic Policy Frameworks program, and Macroeconomic Theory program
Phitawat Poonpolkul	The Australian National University	Multi-Country Models and Methods program, and Growth, Demographics and Productivity program
Lin Qi	The Australian National University	Finance and the Macroeconomy program
Rodrigo da Silva Souza	Federal University of Viçosa	Commodities and the Macroeconomy program
Tony Wiskich	The Australian National University	Climate Change and Energy program
Daniel Silva Withmory	The Australian National University	Finance and the Macroeconomy program
Beili Zhu	The Australian National University	Commodities and the Macroeconomy program

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Vitali Alexeev	University of Tasmania	Finance and the Macroeconomy program, and Commodities and the Macroeconomy 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

Name	Institution	Program
James Ang	Nanyang Technological University	Finance and the Macroeconomy program, and 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
John Baffes	The World Bank	Commodities and the Macroeconomy program
Philip Bagnoli	OECD	Climate Change and Energy program
Faruk Balli	Massey University	Finance and the Macroeconomy program
Michelle L Barnes	Federal Reserve Bank of Boston	Finance and the Macroeconomy program
Antonio Andrés Bellofatto	University of Queensland	Macroeconomic Policy Frameworks program, and Macroeconomic Theory program
Gianluca Benigno	London School of Economics	Open Economy Macroeconomics program
Rohan Best	Massey University	Climate Change and Energy 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, and Commodities and the Macroeconomy program
Martin Bodenstein	Asian Development Bank	Open Economy Macroeconomics program, Macroeconomic Policy Frameworks program, and Macroeconomic Theory program

Name	Institution	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, and Macroeconomic Policy Frameworks program
Robert Breunig	The Australian National University	Growth, Demographics and Productivity program
Robin J Brooks	Goldman Sachs	Growth, Demographics and Productivity program
Markus Brueckner	The Australian National University	Commodities and the Macroeconomy program
Ralph Bryant	Brookings Institution	Multi-Country Models and Methods program
Paul Burke	The Australian National University	Climate Change and Energy program
Giovanni Caggiano	Monash University	Macroeconomic Policy Frameworks program
Yiyong Cai	The Treasury	Climate Change and Energy program
Gerard Caprio	Williams College	Finance and the Macroeconomy program
Julio A Carrillo	Banco de Mexico	Macroeconomic Policy Frameworks program
Efrem Castelnuovo	University of Padova	Macroeconomic Policy Frameworks program
Joshua Chan	University of Technology Sydney	Model Uncertainty and Macro-Econometrics
Yoosoon Chang	Indiana University	Finance and the Macroeconomy program
Yu-chin Chen	University of Washington	Open Economy Macroeconomics program, and Commodities and the Macroeconomy program

Name	Institution	Program
Biplob Chowdhury	University of Tasmania	Finance and the Macroeconomy program
Todd E Clark	Federal Reserve Bank of Cleveland	Model Uncertainty and Macro-Econometrics
Edda Claus	Wilfrid Laurier University	Finance and the Macroeconomy program
Iris Claus	University of Waikato	Macroeconomic Policy Frameworks program
Adam Clements	Queensland University of Technology	Finance and the Macroeconomy program
Patrick J Coe	Carleton University	Model Uncertainty and Macro-Econometrics
Mariarosaria Comunale	Bank of Lithuania	Open Economy Macroeconomics program
David Cook	Hong Kong University of Science and Technology	Open Economy Macroeconomics program
Arusha Cooray	University of Nottingham (Malaysia)	Finance and the Macroeconomy program
Jenny Corbett	The Australian National University	Finance and the Macroeconomy program
Jamie L Cross	BI Norwegian Business School - CAMP	Commodities and the Macroeconomy program
Mario Crucini	Vanderbilt University	Open Economy Macroeconomics program
Gordon De Brouwer	Department of the Environment	Finance and the Macroeconomy program
Paul De Grauwe	The London School of Economics and Political Science	Behavioural Macroeconomics and Complexity program
Emmanuel De Veirman	De Nederlandsche Bank	Finance and the Macroeconomy program
Richard Dennis	University of Glasgow	Macroeconomic Policy Frameworks program

Name	Institution	Program
Alexandre Dmitriev	The University of Auckland	Macroeconomic Theory program
Begona Dominguez	The University of Auckland	Macroeconomic Theory program
Qingyuan Du	Monash University	Open Economy Macroeconomics program
Gerald Dwyer Jr	Federal Reserve Bank of Atlanta	Finance and the Macroeconomy program
Rochelle Edge	Board of Governors of the Federal Reserve System	Macroeconomic Policy Frameworks program
Sandra Eickmeier	Deutsche Bundesbank	Finance and the Macroeconomy program
Graham Elliott	University of California, San Diego	Model Uncertainty and Macro-Econometrics
Yunjong Eo	The University of Sydney	Finance and the Macroeconomy program, and Model Uncertainty and Macro-Econometrics program
Joshua Epstein	Johns Hopkins University	Behavioural Macroeconomics and Complexity program
Shigeru Fujita	Federal Reserve Bank of Philadelphia	Macroeconomic Theory program
Martin Fukac	International Monetary Fund	Macroeconomic Theory program
Prasanna Gai	The University of Auckland	Macroeconomic Theory program
Mauro Gallegati	Università Politecnica delle Marche	Behavioural Macroeconomics and Complexity program
Anthony Garratt	University of London, Birkbeck	Model Uncertainty and Macro-Econometrics
R Quentin Grafton	The Australian National University	Climate Change and Energy program
Matthew Greenwood-Nimmo	University of Melbourne	Finance and the Macroeconomy program

Name	Institution	Program
Nicolas Groshenny	University of Adelaide	Macroeconomic Theory program
Alfred Guender	University of Canterbury	Macroeconomic Policy Frameworks program
Ross Guest	Griffith University	Growth, Demographics and Productivity program
Christopher Hajzler	Bank of Canada	Open Economy Macroeconomics program
Viv B Hall	Victoria University of Wellington	Macroeconomic Policy Frameworks program
Gerhard Hambusch	University of Technology Sydney	Finance and the Macroeconomy program
Ross A Hammond	The Brookings Institution	Behavioural Macroeconomics and Complexity program
Qazi Haque	The University of Western Australia	Macroeconomic Theory program
Don Harding	La Trobe University	Model Uncertainty and Macroeconometrics
Iftekhar Hasan	The Fordham University	Finance and the Macroeconomy program
Gazi M Hasan	University of Waikato	Finance and the Macroeconomy program
David Haugh	OECD	Macroeconomic Policy Frameworks program
Yasuo Hirose	Keio University	Macroeconomic Policy Frameworks program
Viktorija Hnatkovska	University of British Columbia	Open Economy Macroeconomics program
Mathias Hoffmann	University of Zurich	Open Economy Macroeconomics program
Mathias Hoffmann	Deutsche Bundesbank	Open Economy Macroeconomics program

Name	Institution	Program
Cody Yu-Ling Hsiao	Macau University of Science and Technology	Finance and the Macroeconomy program
Stan Hurn	Queensland University of Technology	Finance and the Macroeconomy program
Punnoose (Reuben) Jacob	Reserve Bank of New Zealand	Open Economy Macroeconomics program
Jan PAM Jacobs	University of Groningen	Finance and the Macroeconomy program
Karel Janda	University of Economics, Prague	Climate Change and Energy program
Raghendra Jha	The Australian National University	Growth, Demographics and Productivity program
Frank Jotzo	The Australian National University	Climate Change and Energy program
Benoit Julien	University of New South Wales	Macroeconomic Theory program
Gunes Kamber	Bank of International Settlements	Open Economy Macroeconomics program
Takashi Kano	Hitotsubashi University	Open Economy Macroeconomics program
Özer Karagedikli	Reserve Bank of New Zealand	Finance and the Macroeconomy program and Model Uncertainty and Macro-Econometrics program
Anil Savio Kavuri	Loughborough University	Finance and the Macroeconomy program
Jinill Kim	Korea University	Macroeconomic Policy Frameworks program
Ian King	University of Queensland	Macroeconomic Theory program
Alan Kirman	Aix-Marseille University	Behavioural Macroeconomics and Complexity program
Sagiri Kitao	Keio University	Macroeconomic Theory program
Paul Kitney	The Australian National University	Finance and the Macroeconomy program

Name	Institution	Program
Robert Kollman	Université Libre de Bruxelles	Open Economy Macroeconomics program
Bonsoo Koo	Monash University	Finance and the Macroeconomy program
Ayhan Kose	The World Bank	Finance and the Macroeconomy program
Leo Krippner	Reserve Bank of New Zealand	Finance and the Macroeconomy program
George Kudrna	University of New South Wales	Growth, Demographics and Productivity program
Mariano Kulish	University of New South Wales	Open Economy Macroeconomics program, Finance and the Macroeconomy program, and Macroeconomic Policy Frameworks program
Saten Kumar	Auckland University of Technology	Macroeconomic Policy Frameworks program
Cagri S Kumru	The Australian National University	Macroeconomic Theory program
Peter Lang	The Australian National University	Climate Change and Energy program
Kihoon Lee	The Australian National University	Climate Change and Energy program
Kevin Lee	The University of Nottingham	Model Uncertainty and Macro-Econometrics program
Jong-Wha Lee	Korea University	Multi-Country Models and Methods program, and Growth, Demographics and Productivity program
Kirdan Lees	New Zealand Institute of Economic Research	Macroeconomic Policy Frameworks program
Andrew Leigh	Parliament House	Growth, Demographics and Productivity program
Andrew Theo Levin	International Monetary Fund	Macroeconomic Policy Frameworks program
Shuyun May Li	University of Melbourne	Macroeconomic Theory program

Name	Institution	Program
Yin Liao	Queensland University of Technology	Finance and the Macroeconomy program
Jan Libich	La Trobe University	Macroeconomic Policy Frameworks program
Denny Lie	The University of Sydney	Macroeconomic Policy Frameworks program
Philip Liu	International Monetary Fund	Multi-Country Models and Methods program, and Macroeconomic Theory program
Yingying Lu	Shanghai University	Climate Change and Energy program
Thomas Lubik	Federal Reserve Bank of Richmond	Macroeconomic Theory program
Jakob Madsen	Monash University	Growth, Demographics and Productivity program
Anthony (Tony) Makin	Griffith Business School	Macroeconomic Policy Frameworks program
Wilfredo Maldonado	Catholic University of Brasilia	Macroeconomic Theory program
Pym Manopimoke	Bank of Thailand	Model Uncertainty and Macro-Econometrics program
Vance Martin	University of Melbourne	Finance and the Macroeconomy program
Ian McDonald	University of Melbourne	Behavioural Macroeconomics and Complexity program
Warwick McKibbin	The Australian National University	Growth, Demographics and Productivity program
Michael McMahon	University of Oxford	Macroeconomic Policy Frameworks program
Roland Meeks	University of Essex	Finance and the Macroeconomy program

Name	Institution	Program
Gordon Menzies	University of Technology Sydney	Behavioural Macroeconomics and Complexity program, and Multi-Country Models and Methods program
George Milunovich	Macquarie University	Finance and the Macroeconomy program
Jorge Miranda-Pinto	The University of Queensland	Macroeconomic Policy Frameworks program, and Macroeconomic Theory program
James Mitchell	University of Warwick	Model Uncertainty and Macro-Econometrics
Kamiar Mohaddes	University of Cambridge	Commodities and the Macroeconomy program
Arjuna W Mohottala	The Treasury	Finance and the Macroeconomy program
Masayuki Morikawa	METI - Japan	Growth, Demographics and Productivity program
Adele Morris	The Brookings Institution	Climate Change and Energy program
Solmaz Moslehi	Monash University	Macroeconomic Policy Frameworks program, Growth, Demographics and Productivity program, and Macroeconomic Theory program
Anella Munro	Reserve Bank of New Zealand	Finance and the Macroeconomy program
Tomoyuki Nakajima	Kyoto University	Macroeconomic Policy Frameworks program
James Nason	NC State University	Model Uncertainty and Macro-Econometrics program
Rabindra Nepal	Massey University	Climate Change and Energy program
Bao Nguyen	The Australian National University	Commodities and the Macroeconomy program
Charles Nolan	University of Glasgow	Open Economy Macroeconomics program

Name	Institution	Program
Sylwia Nowak	International Monetary Fund	Finance and the Macroeconomy program
Masao Ogaki	Keio University	Behavioural Macroeconomics and Complexity program
Franziska Ohnsorge	The World Bank	Open Economy Macroeconomics program
Tatsuyoshi Okimoto	The Australian National University	Finance and the Macroeconomy program, and Commodities and the Macroeconomy program
Toshihiro Okubo	Keio University	Globalisation and Trade program
Chiara Oldani	University of Viterbo La Tuscia	Finance and the Macroeconomy program
Denise Osborn	University of Manchester	Model Uncertainty and Macro-Econometrics program
Gulcin Ozkan	The University of York	Open Economy Macroeconomics program
Alessia Paccagnini	University College Dublin	Model Uncertainty and Macro-Econometrics program
Adrian Pagan	University of Sydney	Model Uncertainty and Macro-Econometrics program
Woong Yong Park	Seoul National University	Model Uncertainty and Macro-Econometrics program
Laurent Pauwels	University of Sydney	Open Economy Macroeconomics program and Model Uncertainty and Macro-Econometrics program
Oscar Pavlov	University of Tasmania	Macroeconomic Theory program
David Pearce	The Centre for International Economics	Climate Change and Energy program
Victor Pontines	South East Asian Central Banks (SEACEN)	Finance and the Macroeconomy program
Aubrey Poon	University of Strathclyde	Model Uncertainty and Macro-Econometrics program

Name	Institution	Program
Simon Price	University of Essex	Finance and the Macroeconomy program, and Model Uncertainty and Macro-Econometrics program
Christian R Proaño	Otto-Friedrich-Universität Bamberg	Behavioural Macroeconomics and Complexity program
Mala Valliammai Raghavan	University of Tasmania	Finance and the Macroeconomy program, and Commodities and the Macroeconomy program
Ronald A Ratti	University of Missouri	Finance and the Macroeconomy program
Francesco Ravazzolo	Norges Bank (Central Bank of Norway)	Model Uncertainty and Macro-Econometrics program
Tim Robinson	University of Melbourne	Open Economy Macroeconomics program, Commodities and the Macroeconomy program, and Model Uncertainty and Macro-Econometrics program
Guillaume Rocheteau	University of California at Irvine	Macroeconomic Theory program
John Romalis	The University of Sydney	Globalisation and Trade program
Michael Roos	Ruhr-University Bochum	Behavioural Macroeconomics and Complexity program
Rina Rosenblatt-Wisch	Swiss National Bank	Behavioural Macroeconomics and Complexity program
J Barkley Rosser Jr	James Madison University	Behavioural Macroeconomics and Complexity program
Alberto Russo	Università Politecnica delle Marche	Behavioural Macroeconomics and Complexity program
Facundo Sepulveda	Universidad Santiago de Chile	Macroeconomic Theory program
Sherrill Shaffer	University of Wyoming	Finance and the Macroeconomy program

Name	Institution	Program
Anurag Sharma	Monash University	Growth, Demographics and Productivity program
Jeffrey Sheen	Macquarie University	Macroeconomic Policy Frameworks program
Shuping Shi	Macquarie University	Finance and the Macroeconomy program
Kalvinder K Shields	University of Melbourne	Model Uncertainty and Macro-Econometrics program
Pierre Siklos	Wilfrid Laurier University	Finance and the Macroeconomy program
Tara M Sinclair	The George Washington University	Model Uncertainty and Macro-Econometrics program
Reza Siregar	South East Asian Central Banks (SEACEN)	Finance and the Macroeconomy program
Peter N Smith	The University of York	Finance and the Macroeconomy program
Michael Smith	University of Melbourne	Model Uncertainty and Macro-Econometrics program
Nicola Spagnolo	Brunel University	Finance and the Macroeconomy program
John Stachurski	The Australian National University	Macroeconomic Theory program
Gabriele Standardi	Fondazione Eni Enrico Mattei	Multi-Country Models and Methods program
David Stern	The Australian National University	Climate Change and Energy program
Andrew Stoeckel	The Centre for International Economics	Commodities and the Macroeconomy program
Rodney Strachan	The University of Queensland	Model Uncertainty and Macro-Econometrics program
Satoshi Tanaka	University of Queensland	Macroeconomic Theory program
Kam Ki Tang	University of Queensland	Growth, Demographics and Productivity program

Name	Institution	Program
Lei Ming Chrismin Tang	University of Melbourne	Finance and the Macroeconomy program
Yuki Teranishi	Keio University	Macroeconomic Policy Frameworks program
Susan Thorp	University of Sydney	Finance and the Macroeconomy program
Jing Tian	University of Tasmania	Finance and the Macroeconomy program
Verity Todoroski	The Australian National University	Commodities and the Macroeconomy program
Brian Trung Duc Tran	University of Sydney	Commodities and the Macroeconomy program and Model Uncertainty and Macro-Econometrics program
Chung Tran	The Australian National University	Macroeconomic Theory program
Sirimon Treepongkaruna	The University of Western Australia	Finance and the Macroeconomy program
Takayuki Tsuruga	Osaka University	Open Economy Macroeconomics program
Rod Tyers	The University of Western Australia	Multi-Country Models and Methods program
Kozo Ueda	Waseda University	Macroeconomic Policy Frameworks program
Lawrence Uren	University of Melbourne	Macroeconomic Theory program
Shaun Vahey	The University of Warwick	Model Uncertainty and Macro-Econometrics program
Farshid Vahid	Monash University	Model Uncertainty and Macro-Econometrics program
Abbas Valadkhani	Swinburne University of Technology	Finance and the Macroeconomy program
Tugrul Vehbi	Reserve Bank of New Zealand	Finance and the Macroeconomy program

Name	Institution	Program
Joaquin Vespignani	University of Tasmania	Finance and the Macroeconomy program
Vladimir Volkov	University of Tasmania	Finance and the Macroeconomy program
Yuichiro Waki	The University of Queensland	Macroeconomic Theory program
Sumila Wanaguru	Central Bank of Sri Lanka	Finance and the Macroeconomy program
Mark Weder	University of Adelaide	Macroeconomic Theory program
Peter Wilcoxon	Syracuse University	Multi-Country Models and Methods program, and Climate Change and Energy program
John C Williams	Federal Reserve Bank of San Francisco	Macroeconomic Theory program, and Model Uncertainty and Macro-Econometrics program
Samuel Wills	University of Sydney	Commodities and the Macroeconomy program
Justin Wolfers	University of Michigan	Behavioural Macroeconomics and Complexity program
Wing Thye Woo	University of California Davis	Multi-Country Models and Methods program
Alan Woodland	University of New South Wales	Globalisation and Trade program
Tomasz Wozniak	University of Melbourne	Model Uncertainty and Macro-Econometrics
Mark Wright	University of California, Los Angeles	Globalisation and Trade program
Eliza Wu	University of Technology Sydney	Finance and the Macroeconomy program
Juanyi (Jenny) Xu	Hong Kong University of Science and Technology	Open Economy Macroeconomics program
Ying Xu	The Australian National University	Finance and the Macroeconomy program

Name	Institution	Program
Akira Yakita	Nanzan University	Growth, Demographics and Productivity program
Fang Yao	Reserve Bank of New Zealand	Open Economy Macroeconomics program, Finance and the Macroeconomy program, and Macroeconomic Policy Frameworks program
Daniel Zizzo	Newcastle University	Behavioural Macroeconomics and Complexity program

Visitors

David Vines

University of Oxford
1 April - 4 May

Vance Martin

University of Melbourne
7 April - 9 April

Maurice Obstfeld

University of California, Berkeley
20 May

Jong-Wha Lee

Korea University
21 August - 30 August 2019

Vicki Wilkinson

Australian Treasury
26-27 August 2019

Anna Shabunina

International Monetary Fund
26-27 August 2019

John Piggott

University of New South Wales
26-27 August 2019

Michael Kouparitsas

Australian Treasury
26-27 August 2019

Adrian Pagan

University of Sydney
1 April - 3 April

Philip Clarke

University of Oxford
10 April

Matthew Greenwood-Nimmo

University of Melbourne
1 July - 31 July

Wing Thye Woo

University of California - Davis
26-27 August 2019

Kent Smetters

Wharton School of the University of Pennsylvania
26-27 August 2019

Jessica Robinson

Australian Treasury
26-27 August 2019

George Kudrna

University of New South Wales
26-27 August 2019

Alex Heath

Reserve Bank of Australia
26-27 August 2019

Sarah Harper

University of Oxford
26-27 August 2019

Rafal Chomik

University of New South Wales
26-27 August 2019

Laura Berger-Thomson

Australian Treasury
26-27 August 2019

Malhar Nabar

International Monetary Fund
22 November 2019

Juha Tervala

University of Helsinki, Finland
2-6 December 2019

Lisa Ellinston

Australian Treasury
26-27 August 2019

Philippa Brown

Australian Treasury
26-27 August 2019

John Taylor

Stanford University
28 August 2019

Will Martin

International Food Policy Research Institute
2-4 December 2019

Funding

The table below summarizes CAMA funding for 2019.

Income	
Student fees	0.00
Other income	429,990.15
Internal sales	0.00
Transfer from other	37,188.00
Internal allocations	35,187.00
Operating grant	83,500.00
Investment income	0.00
Total Income	585,865.15
Expenses	
Salaries and related costs	418,151.39
Equipment - capital	0.00
Equipment - non-capital	2,855.61
Scholars expenses	46,364.22
Utilities and maintenance	821.00
Travel field & survey expenses	139,705.99
Expendable research materials	0.00
Contributions	4,957.27
Consultancies	539.55
Consumables	7,863.52
Depn & amort	0.00
Internal purchases	6,052.06
Other expenses	12,129.94
Contingency	0.00
Total Expenditure	639,440.55
Current year operating result	-53,575.40
Transfer inflow/outflow	1,000.00
Net current year operating result	-52,575.40
Prior year cash result	593,434.30
Net operating position	540,858.90

CAMA by numbers

In 2019 CAMA:

published **91** working papers and **6** newsletters

attracted **11** new affiliates

hosted, sponsored or participated in **38** events, including **24** seminars, **2** public lectures and **12** conferences

received **25** visitors

was followed by **413** Twitter users

was a team of **221** research associates

Contact

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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

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