



Australian  
National  
University

# ANNUAL REPORT 2020

## Centre for Applied Macroeconomic Analysis



Photo by [Diz Play](#) on [Unsplash](#)

Crawford School  
of Public Policy

College of  
[Asia and the Pacific](#)

## **Message from the Director**

2020 was a year of enormous challenges. The year started with devastating bushfires, with the ANU campus closed for a few days because of high smoke levels. Weeks later, the campus was closed again because of the severe hailstorm that damaged many cars and buildings. In March, the staff were told to work from home because of the COVID-19 pandemic.

Despite all of the unprecedented events, the CAMA network demonstrated that innovation and adaptation to the circumstances were possible. CAMA rose to the challenges and had a highly productive year. A new research program was created to study the implications of COVID-19 for the global and individual economies. The program headed by Renée Fry-McKibbin and Joaquin Vespignani included 57 new research associates. CAMA organised 23 webinars and recorded 111 papers published in the CAMA Working Paper Series in 2020.

I want to thank all CAMA members and friends for the support through this challenging year. CAMA is a global network of researchers. CAMA's success draws directly on researchers' active participation – researchers who believe in excellence in research and public policy and the importance of contributing to public goods.

**Warwick McKibbin**

Director, Centre for Applied Macroeconomic Analysis

# Contents

Centre for Applied Macroeconomic Analysis – an overview.....	1
Research programs.....	2
Behavioural macroeconomics and complexity .....	2
Climate change and energy .....	3
Commodities and the macroeconomy .....	4
COVID-19 and the macroeconomy .....	4
Finance and the macroeconomy .....	5
Globalisation and trade .....	6
Growth, demographics and productivity .....	6
Macroeconomic policy frameworks .....	7
Macroeconomic theory.....	8
Model uncertainty and macro-econometrics .....	8
Multi-country models and methods.....	8
Open economy macroeconomics .....	9
CAMA RBA Shadow Board.....	9
Current members .....	10
Past members .....	14
Publications .....	16
CAMA Working Paper Series .....	16
Newsletters.....	24
Other publications .....	25
Media .....	31
Events.....	34
Conferences and workshops .....	34
CAMA seminars .....	35
CAMA webinars.....	36
CAMA global webinars.....	40
Other webinars .....	46
Staff and Associates .....	47

Director .....	47
Deputy Director .....	48
Management committee .....	48
Administrator .....	48
PhD students.....	48
Advisory board .....	48
Program directors.....	50
Doctoral student associates.....	51
Research associates.....	52
Visitors .....	63
Funding.....	64
CAMA by numbers .....	65
Contact .....	66

## 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 worldwide. 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 centre's research activities 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. Suggestions 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	
COVID-19 and the macroeconomy	
Finance and the macroeconomy	
Globalisation and trade	
Growth, demographics and productivity	
Macroeconomic policy frameworks	
Macroeconomic theory	
Model uncertainty and macro-econometrics	
Multi-country models and methods	
Open economy macroeconomics	

### Behavioural macroeconomics and complexity

<b>Directors</b>	Corrado Di Guilmi and Timo Henckel
<b>Research Advisor</b>	Prof Dr Cars H Hommes
<b>Research Associates</b>	See complete list under <a href="#">Staff and Associates - Research Associates</a>

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

<b>Directors</b>	Barbara Buchner and Warwick McKibbin
<b>Research Associates</b>	See complete list under <a href="#">Staff and Associates - Research Associates</a>

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

<b>Directors</b>	Paul Cashin and Renée Fry-McKibbin
<b>Research Associates</b>	See complete list under <a href="#">Staff and Associates - Research Associates</a>

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.

## COVID-19 and the macroeconomy

<b>Directors</b>	Renée Fry-McKibbin and Joaquin Vespignani
<b>Research Associates</b>	See complete list under <a href="#">Staff and Associates - Research Associates</a>

The 2020 outbreak of COVID-19 is a truly global shock, unlike any seen before. The public health policies implemented to contain the virus have significantly disrupted the global economy through both supply and demand channels and have substantially affected global financial markets. Governments, central banks, and international financial organizations such as the IMF and the World Bank have stepped up to support the economy with fiscal and monetary stimulus and a substantial increase in the government debt burden. However, the unfolding of COVID-19 is greatly uncertain. Health and hence



economic outcomes appear to be vastly different across countries and even within states within countries. What is certain is that the global economy has fundamentally changed.

The program aims to understand the global and country-specific financial market and macroeconomic impacts of the COVID-19 pandemic. The program will provide a forum to explore the new financial market and economic linkages between countries and the potential mechanisms of recovery from the crisis. The aim is to inform policymakers in both emerging and developed economies and to enhance academic research as the world seeks to recover from this crisis.

The program focusses on:

- The global macroeconomics consequences of the pandemic
- New channels of transmission of the international financial market and economic shocks
- Fiscal policy responses to the pandemic
- Conventional and unconventional monetary policy responses to the pandemic
- The interaction between fiscal and monetary policy in mitigating the effects of the pandemic
- Commodity prices and the coronavirus pandemic
- The COVID-19 and income and intergenerational inequality
- Macroeconomic effects of changes in agents' behaviour and modes of interaction
- Short-term and long-term impacts on the labour market

## Finance and the macroeconomy

<b>Directors</b>	Matthew Greenwood-Nimmo and Renée Fry-McKibbin
<b>Research Associates</b>	See complete list under <a href="#">Staff and Associates - Research Associates</a>

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

<b>Directors</b>	Martin H Davies and David Vines
<b>Research Associates</b>	See complete list under <a href="#">Staff and Associates - Research Associates</a>

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 the 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

<b>Directors</b>	Bruce Chapman and Creina Day
<b>Research Associates</b>	See complete list under <a href="#">Staff and Associates - Research Associates</a>

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

<b>Directors</b>	Ippei Fujiwara and Toshitaka Sekine
<b>Research Associates</b>	See complete list under <a href="#">Staff and Associates - Research Associates</a>

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

<b>Directors</b>	Bruce Preston
<b>Research Associates</b>	See complete list under <a href="#">Staff and Associates - Research Associates</a>

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 labour 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

<b>Directors</b>	James Morley and Benjamin Wong
<b>Research Associates</b>	See complete list under <a href="#">Staff and Associates - Research Associates</a>

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

<b>Directors</b>	Ippei Fujiwara and Warwick McKibbin
<b>Research Associates</b>	See complete list under <a href="#">Staff and Associates - Research Associates</a>

Countries are linked through trade flows and asset markets. The modelling 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

<b>Directors</b>	Martin Berka and Christoph Thoenissen
<b>Research Advisor</b>	Michael B Devereux, Charles Engel, and Maurice Obstfeld
<b>Research Associates</b>	See complete list under <a href="#">Staff and Associates - Research Associates</a>

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 stabilisation 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 investment officer at JBWere. Sally completed her Bachelor and Master degree in economics at Sydney University with First Class Honours and the University Medal. Sally went on to complete a Doctor of Philosophy in economics at Oxford University. She is currently Deputy Chair of the Council of The Women's College, within the University of Sydney, and sits on the Board of Equality Australia. Auld joined J.P.

Morgan in September 2008 as head of fixed income and FX strategy for Australia and New Zealand. She was 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. 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.

### **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). Renée was Associate Dean Research of the College of Asia & the Pacific at 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 Senior Lecturer in the Research School of Economics at ANU College of Business and Economics. He is also a CAMA Research Fellow and director of CAMA's "Behavioural Macroeconomics and Complexity" research program. His research spans the fields of behavioural economics, monetary economics, international macroeconomics, and experimental economics, with a particular focus on financial crises, bubbles and central bank policy. He appears frequently in the media and has written numerous policy briefs. Dr Henckel holds a PhD from the London School of Economics.

## Mariano Kulish



Mariano Kulish received his PhD in economics from Boston College in 2005. His research interests include macroeconomics, monetary economics and applied econometrics with a focus on understanding the behaviour of economies undergoing structural changes. Mariano has developed new techniques to solve and estimate rational expectations models with structural changes and has applied them to policy-relevant settings, such as the recent period of monetary policy with zero interest rates, disinflation policies, and the impact of commodity price fluctuations in Australia. Mariano has published in international economics journals such as the *Review of Economics and Statistics*, the *Journal of Monetary Economics*, the *Journal of International Economics*, the *Journal of Applied Econometrics*, the *Journal of Economic Dynamics and Control*, and the *European Economic Review*.

## 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, stabilisation 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

### Mark Crosby (August 2011-December 2019)



Mark Crosby is Dean of the Global Master of Business Administration (GMBA) and interim Dean of the Global Bachelors of Business Administration (GBBA) effective 17 October 2011. Dr Crosby has held academic appointments at the University of Toronto, the University of New South Wales, and the University of Melbourne, where he was most recently the Associate Dean (International) at the Melbourne Business School. Dr Crosby has co-authored a widely-used textbook on

macroeconomics, and publishes regularly in academic journals, contributes articles to the media, and has written a number of book chapters. Besides his university activities, Dr Crosby has worked or consulted widely for government and private enterprises including the World Bank, the Hong Kong Institute for Monetary Research, the Monetary Authority of Singapore, the South African Treasury, the Center for Strategic and Policy Studies in Brunei, the Commonwealth Bank of Australia, the Reserve Bank of New Zealand, and BHP Billiton. Most recently he completed a project on South Africa's current account deficit and a project on diversifying Brunei's economy. He is a frequent guest on ABC TV and writes regularly for Australian newspapers.

### Mardi Dungey (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.

**Shaun Vahey** (August 2011-May 2013)

Shaun Vahey is Professor at Warwick University and a Research Associate at CAMA (ANU) in the Model Uncertainty and Macro-Econometrics program. His current research interests include: empirical macro, time series econometrics with macro and financial variables, and some data science. He is a regular co-organizer of the Real-time Economics Conference which runs annually (usually) at FRB Philadelphia and other central banks since 2001. Shaun's previous employers include Cambridge University (Christ's College), Melbourne University, the Reserve Bank of New Zealand, Norges Bank and the Bank of England. His research has been published in

academic journals including the *American Economic Review*, the *Journal of Business and Economic Statistics*, the *Journal of Applied Econometrics* and the *Economic Journal*.

Shaun has previously acted as a consultant with The Money Cloud, The Coefficiency Lab, the ACCC, Citadel Group, Rio Tinto, Norges Bank and RBNZ.

Shaun Vahey was a voting member from August-December 2011 and the inaugural chair until May 2013.

## Publications



Photo by Susan Yin on Unsplash

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
111/2020	Computing time-consistent equilibria: A perturbation approach	Dennis R
110/2020	Commodity price volatility, external debt and exchange rate regimes	Majumder MK Raghavan M Vespignani J



109/2020	An unobserved components model of total factor productivity and the relative price of investment	Chan JCC Wemy E
108/2020	Fast and accurate variational inference for large Bayesian VARs with stochastic volatility	Chan JCC Yu X
107/2020	Redistribution and the monetary–fiscal policy mix	Bhattarai S Lee JW Yang C
106/2020	Be kind or take it on the chin? Political narratives, pandemics, and social distancing	Anand K Gai P Lou E Wu SX
105/2020	Federal reserve chair communication sentiments' heterogeneity, personal characteristics, and their impact on target rate discovery	Arismendi- Zambrano J Guidolin M Paccagnini A
104/2020	Surety bonds and moral hazard in banking	Dwyer GP Hasman A Samartin M
103/2020	Climate change, strict Pareto improvements in welfare and multilateral financial transfers	Kotsogiannis C Woodland A
102/2020	The (ir)relevance of rule-of-thumb consumers for US business cycle fluctuations	Albonico A Ascari G Haque Q
101/2020	Three questions regarding impulse responses and their interpretation found from sign restrictions	Ouliaris S Pagan A
100/2020	Uncertainty shocks and inflation dynamics in the US	Haque Q Magnusson LM
99/2020	Time-varying trend models for forecasting inflation in Australia	Guo N Zhang B Cross J
98/2020	Optimal simple objectives for monetary policy when banks matter	Laureys L Meeks R Wanengkirtyo B
97/2020	High-frequency monitoring of growth-at-risk	Ferrara L Mogliani M Sahuc J-G
96/2020	Endogenous fertility, externality and phase out of pensions	Amol Bishnu M Kumar H Ray T

95/2020	Fiscal policy shocks and international spillovers	Ilori AE Paez-Farrell J Thoenissen C
94/2020	News shocks under financial frictions	Görtz C Tsoukalas JD Zanetti F
93/2020	A comparison of monthly global indicators for forecasting growth	Baumeister C Guérin P
92/2020	Multi-product firms and product quality expansion	Pham V Woodland A
91/2020	Real-time forecasting of the Australian macroeconomy using flexible Bayesian VARs	Zhang B Nguyen BH
90/2020	Bayesian state space models in macroeconometrics	Chan JCC Strachan RW
89/2020	Monetary policy with a state-dependent inflation target in a behavioral two-country monetary union model	Proaño CR Lojak B
88/2020	Age-dependent risk aversion: Re-evaluating fiscal policy impacts of population ageing	Poonpolkul P
87/2020	US shocks and the uncovered interest rate parity	Li M Fu B
86/2020	The effect of fuel prices on traffic flows: Evidence from New South Wales	Zhang T Burke PJ
85/2020	A counterfactual economic analysis of Covid-19 using a threshold augmented multi-country model	Chudik A Mohaddes K Pesaran MH Raissi M Rebucci A
84/2020	De jure benchmark bonds	Remolona E Yetman J
83/2020	Implications of cheap oil for emerging markets	Kabundi A Ohnsorge F
82/2020	Factors affecting renters' electricity use: more than split incentives	Best R Burke PJ Nishitateno S
81/2020	Time and frequency connectedness among oil shocks, electricity and clean energy markets	Naeem MA Peng Z Suleman MT

		Nepal R Shahzad SJH
80/2019	Uncertainty and monetary policy during extreme events	Pellegrino G Castelnuovo E Caggiano G
79/2020	Commodity price volatility, fiscal balance and real interest rate	Majumder MK Raghavan M Vespignani J
78/2020	Nowcasting the output gap	Berger T Morley J Wong B
77/2020	Regulatory stress tests and bank responses	Janda K Kravtsov O
76/2020	Climate hysteresis and monetary policy	Panton AJ
75/2020	Liquidity traps in a monetary union	Kollmann R
74/2020	Uncertainty and monetary policy in good and bad times: A Replication of the VAR investigation by Bloom (2009)	Caggiano G Castelnuovo E Nodari G
73/2020	Implications of state-dependent pricing for DSGE model-based policy analysis in Indonesia	Lie D
72/2020	The asymmetric effects of uncertainty shocks	Colombo V Paccagnini A
71/2020	Does Hamilton's OLS regression provide a "better alternative" to the Hodrick-Prescott filter? A New Zealand business cycle perspective	Hall VB Thomson P
70/2020	How large is the economy-wide rebound effect?	Stern D
69/2020	Are fiscal multipliers estimated with proxy-SVARs robust?	Angelini G Caggiano G Castelnuovo E Fanelli L
68/2020	Global macroeconomic cooperation in response to the COVID-19 pandemic: a roadmap for the G20 and the IMF	McKibbin W Vines D
67/2020	Financial uncertainty and real activity: The good, the bad, and the ugly	Caggiano G Castelnuovo E Kima R Delrio S

66/2020	Does the supply network shape the firm size distribution? The Japanese case	Di Guilmi C Fujiwara Y
65/2020	Armageddon and the stock market: US, Canadian and Mexican market responses to the 1962 Cuban missile crisis	Burdekin RK Siklos PL
64/2020	Inflation expectations and the pass-through of oil prices	Aastveit KA Bjornland HC Cross JL
63/2020	Nowcasting unemployment insurance claims in the time of COVID-19	Larson WD Sinclair TM
62/2020	Global macroeconomic scenarios of the COVID-19 pandemic	McKibbin W Fernando R
61/2020	Firms' asset holdings and inflation expectations	Kumar S
60/2020	Measuring exchange rate risks during periods of uncertainty	Ferrara L Yapi J
59/2020	Reallocation effects of monetary policy	Miyakawa D Oikawa K Ueda K
58/2020	Optimal intergenerational transfers: Public education and pensions	Bishnu M Garg S Garg T Ray T
57/2020	Time inconsistency and endogenous borrowing constraints	Bhattacharya J Bishnu M Wang M
56/2020	Covid-19 infections and the performance of the stock market: An empirical analysis for Australia	Brueckner M Vespignani J
55/2020	Capital market liberalization and equity market interdependence	Fry-McKibbin R Yan Z
54/2020	International effects of euro area forward guidance	Bock M Feldkircher M Siklos PL
53/2020	Inflation dynamics: Expectations, structural breaks and global factors	Siklos PL
52/2020	Non-gravity trade	Brueckner M Long NV Vespignani J

51/2020	Sectoral employment dynamics in Australia	Anderson H Caggiano G Vahid F Wong B
50/2020	The global effects of Covid-19-induced uncertainty	Caggiano G Castelnuovo E Kima R
49/2020	Interconnectedness in the Australian national electricity market: A higher moment analysis	Do H Nepal R Smyth R
48/2020	High order openness	Imbs J Pauwels LL
47/2020	Common factors and the dynamics of cereal prices. A forecasting perspective	Kwas M Paccagnini A Rubaszek M
46/2020	Information weighting under least squares learning	Galimberti JK
45/2020	Higher moment constraints for predictive density combination	Pauwels L Radchenko P Vasnev AL
44/2020	Financial factors and the business cycle	Berger T Richter J Wong B
43/2020	Diagnosing housing fever with an econometric thermometer	Shi S Phillips PCB
42/2020	Electricity market integration, decarbonisation and security of supply: Dynamic volatility connectedness in the Irish and Great Britain markets	Do H Nepal R Jamasp T
41/2020	Flickering lifelines: Electrification and household welfare in India	Sedai AK Nepal R Jamasp T
40/2020	Secular stagnation and low interest rates under the fear of a government debt crisis	Kobayashi K Ueda K
39/2020	The moderating role of green energy and energy-innovation in environmental Kuznets: Insights from quantile-quantile analysis	Masibau HO Yanotti M Vespignani J Nepal R

38/2020	A note on the impact of the inclusion of an anchor number in the inflation expectations survey question	Reid M Odendaal H Plessis SD Siklos P
37/2020	The role of financial journalists in the expectations channel of the monetary transmission mechanism	Reid M Siklos P Guetterman T Plessis SD
36/2020	Financial conditions and the risks to economic growth in the United States since 1875	Coe PJ Vahey SP
35/2020	Social distancing and contagion in a discrete choice model of COVID-19	Baskozos G Galanis G Di Guilmi C
34/2020	The role of precautionary and speculative demand in the global market for crude oil	Cross JL Nguyen BH Tran TD
33/2020	Clean energy and household remittances in Bangladesh: Evidence from a natural experiment	Hassan GM
32/2020	Shock dependence of exchange rate pass-through: A comparative analysis of BVARs and DSGEs	Comunale M
31/2020	The effectiveness of currency intervention in a commodity-exporter: Evidence from Mongolia	Pontines V Luvsannyam D Atarbaatar E Munkhtsetseg U
30/2020	Forecasting natural gas prices using highly flexible time-varying parameter models	Gao S Hou C Nguyen BH
29/2020	Trade elasticity: Estimates from product-level data	Cheong J Kwak DW Tang KK
28/2020	Too many shocks spoil the interpretation	Pagan A Robinson T
27/2020	On bootstrapping tests of equal forecast accuracy for nested models	Tchatoka FD Haque Q
26/2020	Demographic change, carbon convergence and climate policy	Liu W
25/2020	Anchored inflation expectations	Carvalho C Eusepi S Moench E Preston B



24/2020	Subdued potential growth: Sources and remedies	Celik SK Kose MA Ohnsorge FL
23/2020	Can this time be different? Policy options in times of rising debt	Kose MA Nagle PSO Ohnsorge FL Sugawara N
22/2020	Macroeconomic impacts of global demographic change on Australia	Liu W McKibbin W
21/2020	Global macroeconomic impacts of demographic change	Liu W McKibbin W
20/2020	Demographic impacts on life cycle portfolios and financial market structures	Liu W Poonpolkul P
19/2020	The global macroeconomic impacts of COVID-19: Seven scenarios	McKibbin W Fernando R
18/2020	Disentangling commodity demand, commodity supply, and international liquidity shocks on an emerging market	Fry-McKibbin R Souza RS
17/2020	Global implications of a US-led currency war	Triggs A McKibbin WJ
16/2020	Resource rents, political rights and civil liberties	Breunig R Wiskich A Wokker C
15/2020	Low wage growth and job-to-job transitions: Evidence from administrative data in New Zealand	Ball C Groshenny N Karagedikli O Ozbilgin M Robinson F
14/2020	Monetary policy when preferences are quasi-hyperbolic	Dennis R Kirsanov O
13/2020	Emerging and developing economies: Ten years after the global recession	Kose MA Ohnsorge FL
12/2020	Global macro-financial cycles and spillovers	Ha J Kose MA Otrok C Prasad ES

11/2020	Dual labor market, inflation, and aggregate demand in an agent-based model of the Japanese macroeconomy	Di Gulmi C Fujiwara Y
10/2020	Global recessions	Kose MA Sugawara N Terrones ME
09/2020	Debt and financial crises	Koh WC Kose MA Nagle PS Ohnsorge FL Sugawara N
08/2020	State-level wage Phillips curves	Kapetanios G Price S Tasiou M Ventouri A
07/2020	Identification robust empirical evidence on the Euler equation in open economies	Haque Q Magnusson LM
06/2020	Rational bubbles in non-linear business cycle models: Closed and open economies	Kollmann R
05/2020	Who did it? A European detective story was it real, financial, monetary and/or institutional: Tracking growth in the Euro area with an atheoretical tool	Comunale M Mongelli FP
04/2020	Evolution or revolution? Distributed ledger technologies in financial services	Kavuri AS Milne A
03/2020	The case for reform of the RBA's policy and communication strategy	Preston B
02/2020	The real effects of loan-to-value limits: Empirical evidence from Korea	Pontines V
01/2020	Aging labor, ICT capital, and productivity in Japan and Korea	Lee JW Kwak DW Song E

## Newsletters

CAMA published six newsletters in 2020. 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 2020 include:

### Behavioural Macroeconomics and Complexity program

- **Di Guilmi C**, Gallegati M, Landini S and Stiglitz JE (2020) 'An analytical solution for network models with heterogeneous and interacting agents', forthcoming in the *Journal of Economic Behavior and Organization*
- **Galimberti JK** (2020) 'Forecasting GDP growth from outer space'. *Oxford Bulletin Economics Statistics*, 82: 697-722. doi:10.1111/obes.12361
- **McDonald IM** (2020) 'A Keynesian model of aggregate demand in the long-run', *Metroeconomica*, forthcoming.

### Climate Change and Energy program

- Best R, **Burke PJ**, and Jotzo F (2020) 'Carbon pricing efficacy: Cross-country evidence'. *Environmental and Resource Economics* 77(1), 69–94.
- Best R and **Burke PJ** (2020) Energy mix persistence and the effect of carbon pricing. *Australian Journal of Agricultural and Resource Economics* 64(3), 555–574.
- Couharde C, Damette O, Generoso R and **Mohaddes K** (2020) 'The growth effects of El Niño and La Niña: Local weather conditions matter', *Energy Research & Social Science* 72, pp. 101892/1–17.
- **Janda K** and Kourilek J, 'Residual shape risk on natural gas market with mixed jump diffusion price dynamics.' *Energy Economics*, January 2020, vol. 85, article 104465, doi.org/10.1016/j.eneco.2019.07.025.
- **Liu W, McKibbin WJ, Morris AC, Wilcoxen PJ** (2020) 'Global economic and environmental outcomes of the Paris Agreement', *Energy Economics*, Volume 90, August 2020, 104838, doi.org/10.1016/j.eneco.2020.104838.
- **McKibbin WJ, Morris AC, Wilcoxen PJ, and Panton AJ** (2020) 'Climate change and monetary policy: issues for policy design and modelling', *Oxford Review of Economic Policy*, Volume 36, Number 3, 2020, pp. 579–603.
- Perdana S and **Tyers R** (2020) 'Global climate change mitigation: strategic incentives', *The Energy Journal*, Volume 41, No 3: 183-206.

### Commodities and the Macroeconomy program

- Bardhan R, Darby S, Debnath R, **Mohaddes K**, and Sunikka-Blank M (2020) 'Grounded reality meets machine learning: A deep-narrative analysis framework for energy policy research', *Energy Research & Social Science*, 69, pp. 101704/1-14.
- Chaudhuri K, Jibril H and **Mohaddes K** (2020) 'Asymmetric oil prices and trade imbalances: Does the source of the oil shock matter?', *Energy Policy* 137, pp. 1–15.

- Majumder MK, **Raghavan M** and **Vespignani J** (2020) 'Oil curse, economic growth and trade openness', forthcoming on *Energy Economics*.
- **Mohaddes K** and Williams RJ (2020) 'The adaptive investment effect: Evidence from Chinese provinces', *Economics Letters* 193, pp. 109332/1-4.
- **Raghavan M** (2020) 'An analysis of the global oil market using SVARMA models', *Energy Economics*, 104633.

### COVID-19 and the Macroeconomy program

- Bruno V, Buonomo C, Buonomo OC, Caspi J, Chiaravalloti A, Gualtieri P, Materazzi M, Palombi L, Pellicciaro M, Piccione E, Pistolese CA, **Oldani C** (2020) 'Lockdown of breast cancer screening for COVID-19: Possible scenario', *In Vivo*, September-October 2020 vol. 34 no. 5 3047-3053.
- **Cho S-W**, 'Quantifying the impact of nonpharmaceutical interventions during the COVID-19 outbreak: The case of Sweden', *The Econometrics Journal*, Volume 23, Issue 3, September 2020, Pages 323–344, doi 10.1093/ectj/utaa025.
- Maffettone P and **Oldani C** (2020), 'COVID-19: A make or break moment for global policy making', *Global Policy Journal*, forthcoming.
- **McKibbin W** and **Fernando R** (2020) 'The economic impact of COVID-19' in Baldwin R. and B. Weber Di Mauro, Economics in the Time of COVID-19, *CEPR Vox-EU*. London
- **McKibbin W** and **Fernando R** (2020) 'The global macroeconomic impacts of COVID-19: Seven scenarios' COVID Economics: Vetted and Real Time papers, vol 10. *Centre for Economic Policy Research*, London. Pp 116-156.

### Finance and the Macroeconomy program

- **Arin K**, Braunfels E and Doppelhoffer P (2020) 'Revisiting the growth effects of fiscal policy: A Bayesian model averaging approach', forthcoming in *Journal of Macroeconomics*.
- Bui C, Scheule H, **Wu E** (2020) 'A cautionary tale of two extremes: The provision of government liquidity support in the banking sector', *Journal of Financial Stability*, forthcoming.
- Corbett J and **Xu Y** (2020) 'What a network measure can tell us about financial interconnectedness and output volatility' *Journal of the Japanese and International Economies*, Volume 58, December 2020, 101105.
- Coccorese P and **Shaffer S** (2020) 'Cooperative banks and local economic growth', forthcoming in *Regional Studies* (CAMA WP 11 /2018).
- Delis M, Kim S, Politsidis P, **Wu E** (2020) 'Regulators vs. markets: Are lending terms influenced by different perceptions of bank risk?' *Journal of Banking & Finance*, In Press.
- Ding C, **Kavuri AS** and Milne A (2020) 'PS14 Lessons from the rise and fall of Chinese peer-to-peer lending', *Journal of Banking Regulation* (2020): 1-11.
- Du Plessis S, Reid M and **Siklos P** (2020) 'What drives household inflation

expectations in South Africa? Demographics and anchoring under inflation targeting, *Economic Systems*, forthcoming.

- Dungey M, Marius M, and **Treepongkaruna S**, 2020, 'Examining stress in Asian currencies: A perspective offered by high frequency financial market data,' *Journal of International Financial Markets, Institutions & Money*, 67.  
doi:10.1016/j.intfin.2020.101200.
- Dungey M, **Fry-McKibbin RA** and Volkov V (2020), 'Transmission of a resource boom: The case of Australia', *Oxford Bulletin of Economics and Statistics*, 82(3), 503-525.
- Fantini G and **Oldani C** (2020) 'The use of swaps by local administrations: the case of Italian regions, 2007-2014', *Journal of Public Budgeting, Accounting and Financial Management*, ISSN: 1096-3367, doi: 10.1108/JPBAFM-12-2019-0184.
- Filardo A and **Siklos P** (2020) 'The cross-border credit channel: Implications for the effectiveness of unconventional monetary policies', *Journal of International Financial Markets, Institutions & Money* 67 (July), 101206.
- **Greenwood-Nimmo M**, Nguyen V, **Wu E** (2020) 'On the international spillover effects of country-specific financial sector bailouts and sovereign risk shocks'. *Economic Record*, In Press.
- Hajargasht G, Nguyen J and **Valadkhani A** (2020) 'The choice between renewables and non-renewables: Evidence from electricity generation in 29 countries', *Energy Journal*, 42(6), Accepted 18 October 2020.
- Hara N, Miyao R and **Okimoto T** (2020) 'The effects of asset purchases and normalization of US monetary policy', *Econ Inq.* doi:10.1111/ecin.12883.
- Kang W, **Ratti R** and **Vespignani J** (2021) 'Global commodity prices and global stock market volatility shocks: Effects across countries', *Journal of Asia Economics*, Volume 71, December 2020, 101249.
- Nguyen J and **Valadkhani A** (2020) 'Dynamic responses of tourism arrivals in Australia to daily currency fluctuations', *Journal of Hospitality and Tourism Management*, forthcoming.
- **Okimoto T** and Takaoka S (2020) 'No-arbitrage determinants of credit spread curves under the unconventional monetary policy regime in Japan', *Journal of International Financial Markets, Institutions and Money*, Volume 64, January 2020, 101143.
- Ongsakul V, **Treepongkaruna S**, Jiraporn P, and Uyar A, 2020, 'Do firms adjust corporate governance in response to economic policy uncertainty? Evidence from board size,' *Finance Research Letters*. doi: 10.1016/j.frl.2020.101613
- Reid M, Bergman Z, Plessis DS, Bergman MM and **Siklos P** (2020) 'Inflation and Monetary Policy: What South African Newspapers Report in an Era of Policy Transparency', *Journal of Economic Issues*, 54:3, 732-754, DOI: 10.1080/00213624.2020.1787045 (CAMA WP 48/2019).
- Richardson A, Mulder TVF, **Vehbi T** (2020) 'Nowcasting New Zealand GDP using machine learning algorithms', *International Journal of Forecasting*, forthcoming (CAMA

WP 47/2018).

- **Pontines V** (2020) 'The real effects of loan-to-value limits: Empirical evidence from Korea', *Empirical Economics*, forthcoming (CAMA WP 02/2020).
- **Pontines V** (2020) 'A Provincial view of consumption risk sharing in Korea: Asset classes as shock absorbers', *Journal of the Japanese and International Economies*, forthcoming (CAMA WP 23/2019).
- Putz A, **Siklos P** and Sulewski C (2020) 'Networks and trade costs in commodity markets', *European Review of Economic History*, forthcoming.
- **Shaffer S** and Spierdijk L (2020) 'Measuring multi-product banks' market power using the Lerner index,' *Journal of Banking and Finance*, forthcoming.
- **Siklos P** (2020) 'Inflation Dynamics: Expectations, Structural Breaks and Global Factors', *Review of Economic Analysis* 12: 203-223.
- **Siklos P** (2020) 'Real and financial factors, commodity prices, and monetary policy: International evidence', *Economic Systems*, forthcoming.
- **Siklos P**, Stefan M and Wellenreuther C (2020) 'Metal prices made in China? A network analysis of industrial metal futures', *Journal of Futures Markets*, forthcoming.

### Globalisation and Trade program

- **Vines D** and **Wills S** (2020) 'The rebuilding macroeconomic theory project part II: multiple equilibria, toy models, and policy models in a new macroeconomic paradigm', *Oxford Review of Economic Policy*, Volume 36, Issue 3, Autumn 2020, Pages 427–497.

### Growth, Demographics and Productivity program

- **Alpaslan B** and Eker EE (2020). 'The role of social capital in environmental protection efforts: Evidence from Turkey'. *Journal of Applied Statistics*, available online.
- **Alpaslan B** Lim K Y and Song Y (2020). 'Growth and welfare in mixed health system financing with physician dual practice in a developing economy: A case of Indonesia', *International Journal of Health Economics and Management*, available online.
- **Alpaslan B** and Yildirim J (2020). 'The missing link: Are individuals with more social capital in better health? Evidence from India'. *Social Indicators Research* (online first).
- Han J-S and **Lee J-W**, 'Demographic change, human capital, and economic growth in Korea', *Japan & The World Economy* 53 (2020) 100984.  
doi.org/10.1016/j.japwor.2019.100984.
- Kwak DW and **Lee J-W** (2020), 'Aging labor, ICT capital and productivity in Japan and Korea,' *Journal of Japanese and International Economies*. 58, December 2020.
- **Lee J-W**, 'Convergence success and the middle-income trap,' *The Developing Economies*, 58(1), March 2020.
- **Yakita A**, 'Economic development and long-term care provision by families, markets and the state.' *Journal of the Economics of Aging* 15 (2020) 100210.



### Macroeconomic Policy Frameworks program

- Asako Y, Funki Y, **Ueda K**, and Uto N, '(A)symmetric information bubbles: Experimental evidence', *Journal of Economic Dynamics and Control*, 110, 103744, 2020.
- Coibion O, Gorodnichenko Y, **Kumar S**, and Pedemonte M (2020) 'Inflation expectations a policy tool?', *Journal of International Economics*. Vol. 124.
- **Eo Y** and **Lie D** (2020) 'Average Inflation Targeting and Interest-Rate Smoothing', forthcoming on *Economic Letters*.
- Froyen RT and **Guender AV**, 'A re-evaluation of the choice of an inflation target in the wake of the global financial crisis,' forthcoming in *New Zealand Economic Papers*, 2020.
- **Fujiwara I** and Waki Y (2020) 'Fiscal forward guidance: A case for selective transparency', *Journal of Monetary Economics*, Volume 116, December 2020, Pages 236-248.
- Katagiri M, Konishi H, and **Ueda K**, 'Aging and deflation from a fiscal perspective,' *Journal of Monetary Economics*, 111, 1-15, 2020.
- **Kumar S** (2020) 'Firms' asset holdings and inflation expectations.' *Journal of Economic Behavior & Organisation*. Vol. 170, pp.193-205.
- Pizzinelli C, Theodoris K and **Zanetti F** (2020) 'State dependence in labor market fluctuations'. *International Economic Review*, vol. 61(3), pages 1027-1072.
- **Ueda K**, 'Dynamic cost of living index for storable goods', *Economics Letters*, 189, 109013, 2020.

### Macroeconomic Theory program

- Gomes A and **Maldonado W** (2020) 'Mergers and acquisitions with conditional and unconditional offers', *International Journal of Game Theory*. doi: 10.1007/s00182-020-00720-6.
- **Maldonado WL**, Egozcue JJ and Pawlowsky-Glahn V (2020) 'No-arbitrage matrices of exchange rates: Some characterizations', *International Journal of Economic Theory*. DOI: 10.1111/ijet.12249
- **Miranda-Pinto J** (2020) 'Production network structure, service share, and aggregate volatility', *Review of Economic Dynamics*. DOI: 10.1016/j.red.2020.07.001

### Model Uncertainty and Macro-Econometrics program

- Anderson HM, **Koo B**, Seo MH, Yao W (2020) 'High-dimensional predictive regression in the presence of cointegration', *Journal of Econometrics*, Volume 2019, Issue 2, December 2020, Pages 456-477.
- **Berger T**, **Morley J** and **Wong B** (2020) 'Nowcasting the output gap', forthcoming on *Journal of Econometrics* (CAMA WP 78/2020).
- Colombo V and **Paccagnini A** (2020) 'Does the credit supply shock have asymmetric effects on macroeconomic variables?' forthcoming on *Economic Letters*.

- Frazier DF and **Koo B** (2020) 'Indirect inference for locally stationary models', *Journal of Econometrics*. DOI: 10.1016/j.jeconom.2020.08.004.
- Kamber G and **Wong B** (2020) 'Global factors and trend inflation', *Journal of International Economics*, vol.122(C), 103265 (CAMA WP 62/2019).
- Kapetanios G, **Price S**, Tasiou M, Ventouri A (2020) 'State-level wage Phillips curves', *Econometrics and Statistics*, ISSN 2452-3062, DOI: 10.1016/j.ecosta.2020.03.005 (CAMA WP 08/2020).
- Kapetanios G, Millard S, Petrova K, **Price S** (2020) 'Time-varying cointegration with an application to the UK Great Ratios', *Economics Letters*, Volume 193, 2020, 109213, ISSN 0165-1765, DOI: 10.1016/j.econlet.2020.109213 (CAMA WP 53/2018).
- **Koo B**, Linton O, Vecchia DL (2020) 'Estimation of a nonparametric model for bond prices from cross-section and time series information', *Journal of Econometrics*. DOI: 10.1016/j.jeconom.2020.04.014.
- Lütkepohl H and **Woźniak T** (2020) 'Bayesian inference for structural vector autoregressions identified by Markov-Switching heteroskedasticity', *Journal of Economic Dynamics and Control*, Vol. 113.
- Mertens E and **Nason J**, 'Inflation and professional forecast dynamics: An evaluation of stickiness, persistence, and volatility,' *Quantitative Economics*, forthcoming (May 2020).
- **Nason J** and Smith GW, 'Measuring the slowly evolving trend in US inflation with professional forecasts,' *Journal of Applied Econometrics*, forthcoming (April 2020).

### Multi-Country Models and Methods program

- Azwar Y and **Tyers R** (2020) 'Indonesian macroeconomic policy through two crises', *Journal of the Southeast Asian Economies*, forthcoming.
- **Tyers R** and **Zhou Y** (2020) 'The US-China trade dispute: a macro perspective', *Singapore Economic Review*, forthcoming.

### Book and book chapter

#### Commodities and the Macroeconomy program

- Chudik A and Pesaran MH and **Mohaddes K** (2020) 'Identifying Global and National Output and Fiscal Policy Shocks Using a GVAR', in Tong Li, M. Hashem Pesaran, and Dek Terrell (eds.), *Advances in Econometrics (Volume 41): Essays in Honor of Cheng Hsiao*, pp. 143–189. Emerald Publishing.

#### Finance and the Macroeconomy program

- Maffettone P and **Oldani C** (2020). 'United in Action' in *G-20 The Riyadh Summit* ed. John J. Kirton. GT Media, London.

### **Growth, Demographics and Productivity program**

- Akdemir T, **Alpaslan B**, and Kiral H (2020). 'Revisiting conditional cash transfers: General overview and its implementation in Turkey'. In Kiral H, Akdemir T (eds) *Public financial management reforms in Turkey: Progress and challenges*, Volume 1. Accounting, Finance, Sustainability, Governance & Fraud: Theory and Application, Springer, Singapore.

### **Macroeconomic Policy Frameworks program**

- **Makin A** (2020) 'The China-US trade imbalance: Evaluating remedial macroeconomic measures' in Lau, E., Simonetti, B., Trinugroho, I., Tan, L.M. (Eds.) *Economics and Finance Readings*, Springer, Singapore.

### **Model Uncertainty and Macro-Econometrics program**

- **Sinclair T** (2020) 'Continuities and discontinuities in economic forecasting', *Futures past. Economic Forecasting in 20th and 21st Century*. Bern, Switzerland.

## **Media**

In 2020, 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 2020 include:

- Warwick McKibbin, 'Renewables key to carbon cuts as 100 technologies in frame', *The Australian*, 13 January
- Warwick McKibbin, 'RBA urged to hold fire on rate cuts', *The Australian*, 17 January
- Warwick McKibbin, 'Country Breakfast Features - Economist Warwick McKibbin helped calculate the cost of the SARS epidemic for the World Health Organisation', *ABC Radio*, 30 January
- Timo Henckel, 'China's central bank in emergency stimulus to cushion coronavirus fears', *ABC Radio*, 3 February
- Warwick McKibbin, 'Time to invest in basic safeguards against contagion', *Australian Financial Review*, 19 February
- Warwick McKibbin, 'Taylor uses price tag to target Labor', *Australian Financial Review*, 25 February
- Warwick McKibbin, 'How coronavirus is damaging the dollar and the 'wage theft' hot potato', *ABC Radio National*, 27 February
- Warwick McKibbin, 'Covid-19 is now in 50 countries, and things will get worse', *The Economist*, 29 February.

- Timo Henckel, 'Australian stock market falls more than 2% over coronavirus impact', *The Guardian*, 2 March
- Warwick McKibbin and Roshen Fernando, 'The first economic modelling of coronavirus scenarios is grim for Australia, the world', *The Conversation*, 3 March
- Warwick McKibbin and Roshen Fernando, 'Pandemic could knock \$2.3 trillion or more from global economy', *The Canberra Times*, 3 March
- Warwick McKibbin, 'Property boom hides a weak economy heading into big storm clouds', *ABC radio*, 4 March
- Warwick McKibbin, 'How to understand the risks of 100,000 viral deaths', *Australian Financial Review*, 5 March
- Warwick McKibbin, 'Coronavirus will hurt the global economy – but how do you model the cost? An economist explains', *ABC News*, 5 March
- Warwick McKibbin, 'What are the possible economic effects of COVID-19 on the world economy? Warwick McKibbin's scenarios', *The Brookings Institution*, 6 March
- Warwick McKibbin, 'Listen: why does productivity remain weak in Australia?', *Australian Financial Review*, 11 March
- Warwick McKibbin, 'Extended interview with Warwick McKibbin', *The Business*, 12 March
- Warwick McKibbin, 'Coronavirus; radical action needed to stem the spread in Australia', *60 minutes*, 15 March
- Warwick McKibbin, 'Government and the Reserve Bank working on new plans to offset coronavirus', *ABC News*, 17 March
- Warwick McKibbin, 'Economist pushes HECS scheme with zero-interest loans for everyone', *The Canberra Times*, 20 March
- Warwick McKibbin and Bruce Chapman, 'Give people and business money now they can pay back later (if and when they can)', *The Conversation*, 29 March
- Warwick McKibbin, 'Modelling the economic consequences of Covid-19', *Vox CEPR Policy Portal*, 7 April
- Warwick McKibbin, 'RBA warns of 'biggest contraction since 1930s' due to COVID-19', *ABC – RN Breakfast*, 22 April
- Warwick McKibbin, 'The RBA needs a new post-virus monetary policy game', *Australian Financial Review*, 5 May
- Warwick McKibbin, 'Can countries balance trade-off between saving lives and economic recovery?', *Arirang News*, 6 May
- Warwick McKibbin, 'Fighting COVID-19 in the global economy', *NHK World – Japan*, 14 May
- Warwick McKibbin, 'Experts say South Korean economy will be relatively unscathed by COVID-19', *Arirang News*, 20 May

- Renee McKibbin, 'New global forum to tackle macroeconomic recovery', *Australian National University News*, 21 May
- Warwick McKibbin and Roshen Fernando, 'Global macroeconomic scenarios of the COVID-19 pandemic', *The Brookings Institute*, 25 June
- Warwick McKibbin and Roshen Fernando, 'Record drop in job vacancies as virus hits', *9 News*, 25 June
- Warwick McKibbin and Roshen Fernando, 'COVID-19 to cost Australia \$170 billion and women will bear the brunt', *Sydney Morning Herald*, 25 June
- Warwick McKibbin, 'Economist backs HECS-style loans to replace JobKeeper', *The Canberra Times*, 26 June
- Warwick McKibbin and others, Politics with Michelle Grattan: two leading economists on Australia's post-COVID economy, *The Conversation*, 2 July
- Ayhan Kose, Alphabet soup: Using a letter to predict an economic recovery spells trouble, *The Sydney Morning Herald*, 3 July
- Joaquin Vespignani, Calls for higher income supports for unemployed Australians who study, *The NewDaily*, 6 July
- Warwick McKibbin, Extended interview with Warwick McKibbin, *The Business*, 14 July
- Warwick McKibbin, Global recovery may be job poor on tech shifts, McKibbin says, *Bloomberg*, 31 August
- Warwick McKibbin and others, Road to recovery hinges on controlling COVID-19: RBA and economists, *The Sydney Morning Herald*, 15 September
- Alison Booth, Efrem Castelnuovo, Renee Fry-McKibbin, Warwick McKibbin, James Morley, Bruce Preston and others, Leading Australian economists on the COVID-19 crisis, *Academy of the Social Sciences in Australia*, 15 September
- Warwick McKibbin, Extended interview with Warwick McKibbin, *The Business*, 29 September
- Warwick McKibbin, The RBA is stabilising the economy. The next job is to reform it, *Australian Financial Review*, 3 November
- Warwick McKibbin, Extended interview with Warwick McKibbin, *The Business*, 30 November

CAMA participated on Twitter (@CAMacroAnalysis) and contributed to *APPS Policy Forum*. *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 2020 include:

- McKibbin W and David Levine, [Simple steps to reduce the odds of a global catastrophe - Preventing the spread of coronavirus and the scale of potential damage](#), 20 February 2020
- McKibbin W, Holden R and Quiggin J, [Macroeconomic frameworks need urgent review](#), 7 May 2020

- Breunig R and Watson T, [Strengthening JobKeeper](#), 16 June 2020
- Breunig R, Sobeck K and Martin Pearce, [Podcast: Talking with the tax team about policy](#), 7 August 2020
- McKibbin W, [The Reserve Bank of Australia is stabilising the economy](#), 4 November 2020

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



Photo by Michal Czysz on Unsplash

## 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 2020, the webinars presented by CAMA were audio recorded. These podcasts can be found at <https://cama.crawford.anu.edu.au/news-events/podcasts/audio>

## Conferences and workshops

### **7th annual workshop on the global economy**

*10 to 11 February 2020*

*The Brookings Institution, Washington DC*

*Various speakers*



## **Mardi Dungey memorial research conference**

*22 February 2020*

*Washington DC*

*Various speakers*

Event organised by the Institute for International Economic Policy, the Research Program on Forecasting, the Centre for Applied Macroeconomic Analysis, University of Tasmania, and the Society for Nonlinear Dynamics and Econometrics

## **CAMA seminars**

### **Tipping, the optimal carbon price and weighing cows, geoengineering and coal**

**Date:** 29 January

**Presenter:** Anthony Wiskich (CAMA, PhD Student)

In this seminar, Anthony Wiskich describes an integrated assessment model with an unknown temperature threshold where severe and irreversible climate impacts, called a tipping point, occurs.

The possibility of tipping leads to the following linked outcomes: a prolonged period of peak temperature; a rebound in emissions prior to and during peak temperature; and a fall in the optimal carbon tax as a ratio of output prior to and during peak temperature.

Although tipping can occur in any period where temperature rises to a new maximum, the optimal carbon price can be calculated from future temperature outcomes conditional on no tipping. Learning that tipping has not occurred lowers the tax. Optimal prices for short-lived mitigation actions such as methane abatement and geoengineering are compared with long-lived carbon mitigation. The use of geoengineering can lower the initial carbon tax and extend the life of the tax.

### **Does gender affect innovation, credit access and environmental outcomes?**

**Date:** 29 January

**Presenter:** Hang Hoang (CAMA, PhD Student)

Despite the claims that women fail to access education, job opportunities and political responsibility compared with men, the role of women has gradually changed and there has been a significant increase in the number of women entrepreneurs recently.

Using the data from Vietnam SMEs for the period from 2007 to 2015 and fixed effect estimations, Hang Hoang explores the effects of gender on SME activities in three dimensions: innovation, credit access and environmental outcome. The results found by the author provide evidence that there are no gender differences in firm innovation and environmental outcomes, but that a gender gap plays a role in access to credit.

## **The heterogeneous effects of global and national business cycles on employment in U.S. states and metropolitan areas**

**Date:** 5 March

**Presenter:** Alexander Chudik (Federal Reserve Bank of Dallas)

The growth of globalisation in recent decades has increased the importance of external factors as drivers of the business cycle in many countries. Globalisation affects countries not just at the macro level but at the level of states and metro areas as well. The paper presented in this seminar isolates the relative importance of global, national and region-specific shocks as drivers of the business cycle in individual US states and metro areas. The author finds about two thirds and a half of the employment fluctuations in US states and metro areas, respectively, are explained by the global and national shocks lumped together. The split between the importance of the global and national shocks is about 50:50, based on the standard identification scheme in the literature.

## **CAMA webinars**

### **Remittance trap: myth or reality? Threshold study of remittances and growth**

**Date:** 2 April

**Presenter:** Sud Dahal (CAMA, PhD Student)

Studies on remittances concentrating on the microeconomic implications have broadly reached a consensus that remittances have a welfare-enhancing effect. They lift people out of poverty, have a direct beneficial impact on the health and education of migrant families and increase consumption. However, other studies have shown that high remittances can lead to a trap at the macroeconomic level as collectively, they fail to contribute to the longer-term growth of a country. The paper presented in this seminar revisits this debate on the remittance and growth nexus, examining whether there is a 'remittance trap' or 'threshold' above which remittances start to have a negative effect on growth. Using different empirical approaches based on a large panel dataset of 70 countries between 1970-2018, the study finds that at high levels of remittances appear to be associated with less growth.

### **Macroeconomic and environmental implications of a demographic transition in a life-cycle model**

**Date:** 7 May

**Presenter:** Tsendsuren Batsuuri (CAMA, PhD Student)

This seminar investigates the macroeconomic and environmental implications of a demographic transition combining a tractable life-cycle model with an energy-dependent production function widely used for climate policy. Simulations show that demographic

transitions can have a significant impact on a country's economic growth and CO<sub>2</sub> emissions both in the short and the long run, even in a gradual and slow transition scenario. Specifically, during the transition, a demographic transition can increase CO<sub>2</sub> emissions by increasing capital accumulation, energy intensity of the economy, labour force participation, and by increasing prime-age workers in the workforce. Furthermore, the effect of the demographic transition is non-linear, and it will eventually disappear as both fertility and mortality patterns converge to low levels. These findings have several policy implications. First, it implies that when the countries are at different stages of their demographic transition, comparing countries' efforts to reduce their carbon emissions under the Paris Agreement will be complicated. Second, there may be no free lunch in reducing CO<sub>2</sub> emissions as the decline in population growth rate, and the population aging may not produce emissions reductions as often told in popular narratives. This study highlights the importance of incorporating demographic considerations into climate-economy models and proposes an appropriate modelling framework.

### Demographic impacts on life cycle portfolios and financial market structures

**Date:** 14 May

**Presenter:** Phitawat Poonpolkul (CAMA, PhD Student)

The paper presented in this seminar provides a framework to endogenise rates of return for risk-free bonds and risky capital in an overlapping generation model, where the return on capital is endogenised by introducing idiosyncratic production shocks to avoid computation challenges associated with aggregate production shocks in the literature. The framework enables the interaction between financial markets and macroeconomic conditions in a production economy. Based on this framework, the paper presented in this seminar first examines life-cycle portfolio choice in a steady state, and illustrates that several factors such as borrowing costs, labour income and production risk play important roles in life-cycle portfolios. The paper then shows that population aging has important impacts on macroeconomic conditions, life-cycle behaviours and financial market structures. More specifically, population aging results in higher capital-labour ratios, and pushes down the rates of return on both assets. The bond market shrinks significantly, and capital decreases if the fertility rate declines but increases if the mortality rate declines, leading to structural change in the financial market. The author concludes that the impacts on life-cycle variables are quite different in the fertility and mortality cases particularly at the late stage of life.

### Climate hysteresis and monetary policy

**Date:** 1 July

**Presenter:** Augustus Panton (CAMA, PhD Student)

Since the birth of the natural rate hypothesis, the conventional notion that short-term output simply fluctuates around a relatively stable long-term trend became the norm in modern macroeconomics, including in the standard New Keynesian DSGE model. However, the global financial crisis (GFC) led to a serious rethinking of this norm, giving rise to the re-emergence of the Blanchard-Summers' hysteresis debate and a new business cycle paradigm in which the short-term output effects of financial crises permanently feed into long-term growth trends. Using a Bayesian-estimated structural multivariate filtering model calibrated to data for Australia and the United States, the innovation of the paper presented by Augustus in this webinar is the incorporation of climate hysteresis into the estimation of potential output and the output and unemployment gaps. The results suggest non-trivial implications for monetary policy in a carbon-constrained world. Not only are the model-based estimates of potential output and NAIRU more volatile with climate shock persistence, the climate-neutral output and unemployment gap estimates are much smaller than conventional estimates, with different implications for inflation signals during the upturn or downturn of the business cycle. For economies that are more susceptible to disruptive climate shocks, especially in the developing world, an environment in which both demand conditions and the underlying supply potential are rapidly changing will severely complicate the conduct of forward-looking macroeconomic policy.

### **Age-dependent risk aversion: Re-evaluating fiscal policy impacts of population ageing**

**Date:** 24 September

**Presenter:** Phitawat Poonpolkul (CAMA, PhD Student)

The study presented in this webinar revisits optimal fiscal policies in response to population ageing by introducing an age-dependent increasing risk aversion assumption into an OLG model with risk-sensitive preferences to factor in the welfare cost of the policy-induced uncertainties.

The findings suggest that, based on future generations' welfare, financing population ageing by either a social security benefit reduction or an extension of the retirement age may not be as strongly preferred over a payroll tax increase as prior studies have suggested because of the detrimental welfare impacts from the consequent increase in uncertainties. Varying risk aversion also emphasizes the role of precautionary savings that causes individuals to respond slightly differently to changes in demographic structures and price variables. This, in turn, influence the redistribution of life-cycle variables and transition dynamics of aggregate variables.

## **Commodity-induced capital shortfall and survival of renewable and non-renewable resource firms**

**Date:** 15 October

**Presenter:** Denny Irawan (CAMA, PhD Student)

The study presented in this seminar modifies the Systemic Risk Index (SRISK) by Brownlees and Engle (2017) to measure potential capital shortfall of natural resource companies and how it is affected by the fluctuation of the commodity price cycle and business cycles, and whether macroeconomic uncertainties can explain firms failure probability. As an addition to standard market beta, this study also employs commodity beta to calculate potential capital shortfall.

Thus, there are two SRISKs calculated in this study. The first is the standard Market SRISK (MSRISK), and the second is the Commodity SRISK (CSRISK). The results found by the authors suggest that CSRISK can capture the capital shortfall of the sample with a similar pattern as MSRISK, but with an average 15 per cent higher level of capital shortfall. This finding strongly indicates that MSRISK might underestimate potential capital shortfall, especially for sectors that are more sensitive to commodity price instead of stock market indices. Furthermore, the results from the Panel Vector Autoregressive (PVAR) suggest procyclical responses of capital shortfall toward shocks of global business cycles and uncertainties. The last analysis suggests that macroeconomic uncertainties positively increase firms' failure probability. Meanwhile, business cycles have mixed and sector-specific results.

## **The impact of excess reserves on the effectiveness of monetary policy transmission in Papua New Guinea**

**Date:** 29 October

**Presenter:** Thomas Wangi (CAMA, PhD Student)

The banking system in Papua New Guinea has recorded extraordinary growth of excess reserves in recent years. The accumulation of high levels of excess reserves may have undesired implications on the effectiveness of monetary policy transmission. Hence, the paper presented in this seminar employs the structural VAR model to measure the effects of the structural one-standard-deviation shock to excess reserves on the lending rate, the private sector loans, the exchange rate, the CPI and real GDP using monthly data from January 2002 to December 2017.

The results found by the author show that the monetary policy shocks appear to be less efficient in influencing the outcome variables through the interest rate channel, especially the CPI and real GDP in the short horizon. Similarly, in the long run, the response of real GDP to the shocks is not consistent with theoretical expectations. The negligible effects establish that the existence of excess reserves weakens the transmission of monetary

policy in Papua New Guinea. The study suggests that in order to reduce excess reserves in the banking system, the central bank should consider policy interventions such as increasing the cash reserve requirement, raising the policy rate and improving the financial market system.

## **CAMA global webinars**

### **Launch COVID-19 and the Macroeconomy Research Program**

**Date:** 19 May 2020

**Speakers:** Creina Day (Australian National University), Francesco Ravazzolo (Free University of Bozen-Bolzano, Italy), Anella Munro (Asia School of Business, Malaysia), Joaquin Vespignani (University of Tasmania) and Warwick McKibbin (Australian National University)

To celebrate the launch of the new research program “COVID-19 and the macroeconomy” in the Centre for Applied Macroeconomic Analysis a Zoom panel is planned for Tuesday, May 19, 2020. Warwick McKibbin will present his new results with Roshen Fernando on the global economic consequences of the pandemic based on new data on how the crisis is unfolding. Renée Fry-McKibbin will then Chair a panel consisting of CAMA research associates Creina Day (Australian National University), Francesco Ravazzolo (Free University of Bozen-Bolzano, Italy), Anella Munro (Asia School of Business, Malaysia), Joaquin Vespignani (University of Tasmania) and Warwick McKibbin in a discussion of the longer-term issues going forward for the macroeconomy as the world recovers from the pandemic and economic crisis.

### **Testing responses through agent-based epidemiology (TRACE)**

**Date:** 28 May 2020

**Speaker:** Ross Hammond, Brookings Institution, Washington DC

TRACE (Testing Responses through Agent-based Computational Epidemiology) is an agent-based computational model developed by a team from Brookings and Washington University in St. Louis, with the specific goal of providing insights into how policies that use testing and contract tracing might help contain the COVID-19 pandemic. It draws on the extensive body of evidence about both the current and past epidemics, and is also designed to manage a high degree of remaining uncertainty about some of the parameters it uses.



## COVID-19 and policy choices

**Day:** 4 June 2020

**Speakers:** Daniel Rees (Bank for International Settlements), Hilde Bjornland (BI Norwegian Business School), James Morley (University of Sydney)

Countries have adopted wide-ranging policy responses to the COVID-19 outbreak prompting debate about the trade-offs between economic activity, a healthy population, and individual freedoms. Daniel Rees (Bank for International Settlements), Hilde Bjornland (BI Norwegian Business School), and James Morley (University of Sydney) will share their views on the trade-offs between growth, population containment, and health in a COVID-19 world in a panel discussion on June 4, 2020.

## Nowcasting the output gap

**Day:** 11 June 2020

**Speaker:** Benjamin Wong, Monash University

In this seminar Benjamin Wong will propose a way to directly nowcast the output gap using the Beveridge-Nelson decomposition based on a mixed-frequency Bayesian VAR. The mixed-frequency approach produces very similar estimates of the U.S. output gap to those based on a quarterly model, but it is able to provide timely updates to estimates within a quarter as higher-frequency data become available. The author finds that the output gap nowcasts are much more reliable than those for output growth, with monthly indicators for a credit risk spread, consumer sentiment, and initial claims containing particularly useful information about the output gap. An out-of-sample analysis of the COVID-19 crisis anticipates huge declines in the US output gap in the first half of 2020 before quarterly real GDP is observed, with a scenario nowcast given data up to April 2020 implying an output gap of -28.8 per cent in 2020Q2.

## Financial uncertainty and real activity: The good, the bad, and the ugly

**Day:** 18 June 2020

**Speaker:** Giovanni Caggiano, Monash University

The paper presented in this seminar quantifies the finance uncertainty multiplier (i.e., the magnifying effect of the real impact of uncertainty shocks due to financial frictions) by relying on two historical events related to the US economy, i.e., the large jump in financial uncertainty occurred in October 1987 (which was not accompanied by a deterioration of the credit supply conditions), and the comparable jump in financial uncertainty in September 2008 (which went hand-in-hand with an increase in financial stress). Working with a VAR framework and a set-identification strategy which focuses on - but it is not limited to - these two dates, Giovanni estimates the finance uncertainty multiplier to be equal to 2, i.e., credit supply disruptions are found to double the negative output response

to an uncertainty shock. The author then employs the model to estimate the overall economic cost of the COVID-19 uncertainty shock under different scenarios. The results point to the possibility of a cumulative yearly loss of industrial production as large as 31 per cent if credit supply gets disrupted. Liquidity interventions that keep credit conditions as healthy as they were before the COVID-19 uncertainty shock are found to substantially reduce such loss.

## Global economic impacts of COVID-19

**Day:** 25 June 2020

**Speakers:** Ayhan Kose (World Bank), John Bluedorn (IMF) and Warwick McKibbin (ANU)

The World Bank recently released the *Global Economic Prospects Report*, and the IMF will release its *World Economic Outlook Report* on the day of this webinar. Both focus on the economic impacts of COVID-19 on the global economy. Meanwhile, Roshen Fernando and Warwick McKibbin have updated their scenarios of the progression of the pandemic on economic outcomes. Join the panel discussion featuring Ayhan Kose of the World Bank, John Bluedorn of the IMF and Warwick McKibbin from the ANU as they share their insights into likely economic outcomes of COVID-19.

## Deploying stimulus for a better world

**Day:** 02 July 2020

**Speakers:** Barbara Buchner (Climate Policy Initiative), Frank Jotzo (ANU) and Adele Morris (Brookings Institution)

Economic recovery from COVID19 will require a massive global stimulus. Join Barbara Buchner (Climate Policy Initiative), Frank Jotzo (ANU) and Adele Morris (Brookings Institution) in a discussion on how the required stimulus presents an opportunity for governments to address the pressing need for solutions to climate change, while at the same time supporting economic recovery.

## Checking the path towards recovery from the COVID-19 response

**Day:** 09 July 2020

**Speakers:** Enrique Martinez-Garcia (Federal Reserve Bank of Dallas)

The paper presented in this seminar examines the impact of the behavioural changes and governments' responses to the spread of the COVID-19 pandemic using a unique dataset of daily private forecasters' expectations on a sample of 32 emerging and advanced economies from January 1 till April 13, 2020. Enrique documents three important lessons from the data: First, there is evidence of a relation between the stringency of the policy interventions and the health outcomes consistent with slowing down the spread of the pandemic. Second, the author finds robust evidence that private forecasters have come to anticipate a sizeable contraction in economic activity followed by a check mark recovery as

a result of the governments' increasingly stringent response. The evidence suggests also that workplace restrictions have further contributed to the downturn and to the subsequent sluggish recovery—opening up the question about the costs of tighter work restrictions. Finally, the author argues inflation expectations have not changed significantly so far. Through the lens of the neoclassical growth model, these changes in macro expectations can result from the resulting work disruptions and the potential productivity slowdown from the gradual de-escalation of the confinement.

## Data, data science and COVID-19

**Day:** 16 July 2020

**Speakers:** Anthony Goldbloom (CEO and founder of Kaggle, the world's largest machine learning community), David Gruen (Australian Statistician and Agency Head of the Australian Bureau of Statistics), and Tara Sinclair (Associate Professor at George Washington University and Senior Fellow of the Indeed Hiring Lab)

The pace of evolution of COVID-19 has meant the need for new data and methods of analysing data more urgently than ever before. Our speakers are Anthony Goldbloom (CEO and founder of Kaggle, the world's largest machine learning community), David Gruen (Australian Statistician and Agency Head of the Australian Bureau of Statistics), and Tara Sinclair (Associate Professor at George Washington University and Senior Fellow of the Indeed Hiring Lab). Kaggle sets challenges related to COVID-19 for the machine learning community to solve, including a challenge sponsored by the White House. The Australian Bureau of Statistics has rapidly developed new statistical products to meet critical COVID-19 information needs, and economists and policymakers are looking to private sector data, such as real-time granular data on the labour market, for timely insights in these unprecedented times. Our speakers will share their substantial experience in their critical roles being on the frontline of COVID-19 and managing data.

## International economic cooperation post Covid-19: A discussion panel

**Day:** 23 July 2020

**Speakers:** Cameron Hepburn (Oxford University), Beata Javorcik (Oxford University), Warwick McKibbin (ANU) and Christopher Adam (Oxford University)

In the current global crisis, many people have called for the kind of international economic cooperation evident during and after the Global Financial Crisis, cooperation which has been sadly lacking since the outbreak of the COVID-19 epidemic. But what would such cooperation involve? Our four speakers will aim to provide some answers, drawing on papers forthcoming in a special issue of the Oxford Review of Economic Policy on COVID-19 Economics (see <https://academic.oup.com/oxrep/pages/About>). Cameron Hepburn, a former Australian Rhodes Scholar, is Professor of Environmental Economics at Oxford University and Director of Oxford's Smith School of Enterprise and the Environment. He

will speak on climate economics, the possibility of a green post-COVID-19 recovery, and the UN Climate Change Conference, due to take place in Glasgow in November 2021 (COP26). Beata Javorcik is Professor of Economics at All Souls College, Oxford, and currently Chief Economist at the European Bank for Reconstruction and Development. She will discuss the severe contractions to trade finance already caused by COVID-19 and the resulting reductions in international trade, and will consider the protectionist pressures which COVID-19 is causing and the actions needed at the WTO to prevent these from gathering strength. Warwick McKibbin, AO, FASSA, is Professor of Public Policy and Director of the Centre for Applied Macroeconomic Analysis in Crawford School of Public Policy at The Australian National University. He will talk about the enhanced fiscal support which is now required in many emerging market economies, measures which would parallel the fiscal support already provided by most advanced economies, but which financial markets have prevented from taking place. Warwick will also discuss the G20 leadership, and IMF backing, which would be needed if such policies were to be adopted. Christopher Adam is Professor of Development Economics at Oxford University, and a Visiting Scholar at the IMF. He is also a member of the research programme on macroeconomic policy in low-income countries, conducted jointly by the IMF and the UK's Department for International Development. His talk will describe the very difficult macroeconomic adjustment which COVID-19 is forcing on countries in sub-Saharan Africa, and outline the additional aid and debt relief which these countries now desperately need. The Panel will be chaired by David Vines, Director of the Globalisation and Trade program in CAMA, a graduate of Melbourne University, who is Emeritus Professor of Economics at Balliol College in Oxford. At the time of the Global Financial Crisis, he was the Research Director of the European Union's Framework Seven PEGGED Research Programme on Global Economic Governance which brought together a number of economists to provide policy advice during that earlier period of turmoil.

### Developing resilience to systemic hazards

**Day:** 27 August 2020

**Speakers:** Ann Florini (clinical professor at the Thunderbird School of Global Management, Arizona State University) and Sunil Sharma (distinguished visiting scholar at the Elliott School of International Affairs, The George Washington University, and a senior associate at the Council on Economic Policies, Zurich, Switzerland)

Pandemics like COVID-19, economic crises, and environmental instability hit economies and societies hard, but we cannot predict precisely where or when. As politics, economics and natural systems become more complex, fragile and harder to manage, the world needs to develop strategies for resilience to such systemic hazards. Join Ann Florini and Sunil Sharma in a webinar to consider what principles and practices can build the resilience of our global society so desperately needs.

## Japan's economic crisis and recovery

**Day:** 9 September 2020

**Speakers:** Toshitaka Sekine (Hitotsubashi University) and Sagiri Kitao (University of Tokyo)

**Chair:** Ippei Fujiwara

This panel will discuss the economic crisis from the coronavirus pandemic and the recovery strategy for Japan. How does COVID-19 change the economic outlook in Japan? Does a relatively high rate of corporate savings in major Japanese firms put them in a better position than their foreign rivals? Will Japan's large government debt and limited capacity for fiscal expansion constrain the recovery process?

Toshitaka Sekine is a Professor in the Asian Public Policy Program at Hitotsubashi University. Prior to taking up the current position, he spent 33 years as an economist at the Bank of Japan, as well as at the BIS and the IMF. He was the Director-General of the Research and Statistics Department, equivalent to the "Chief Economist" of the Bank of Japan from 2015 until 2019. His research includes inflation dynamics, exchange-rate pass-through, corporate investment, and bank lending behaviour. He received a BA from the University of Tokyo and a DPhil from Oxford University.

Sagiri Kitao is a Professor of Economics at the University of Tokyo. Her main research focus is on macroeconomics, and her research covers topics such as income taxation, wealth distribution and inequality, demographic transitions, and social security reforms. She is the recipient of the Nakahara prize given to the Japanese economist under the age of 45, whose work has gained international recognition in 2016. Previously she worked as Assistant Professor at the University of Southern California's Marshall School of Business and Senior Economist at the Research Department of the Federal Reserve Bank of New York. She received BA in political science from Waseda University, a Master's degree in Public Administration in International Development from the John F. Kennedy School of Government at Harvard University, and a Ph.D. in economics from New York University.

This event is hosted by the Australia Japan Research Centre, ANU Japan Institute and the Centre for Applied Macroeconomic Analysis.

## A counterfactual economic analysis of COVID-19 using a threshold augmented multi-country model

**Day:** 19 November 2020

**Speakers:** Hashem Pesaran (University of Southern California)

The paper presented in this seminar develops a threshold-augmented dynamic multi-country model (TGVAR) to quantify the macroeconomic effects of COVID-19. We show that there exist threshold effects in the relationship between output growth and excess

global volatility at individual country levels in a significant majority of advanced economies and in the case of several emerging markets.

We estimate a more general multi-country model augmented with these threshold effects as well as long term interest rates, oil prices, exchange rates and equity returns to perform counterfactual analyses. We distinguish common global factors from trade-related spill overs and identify the COVID-19 shock using GDP growth forecast revisions of the IMF in 2020Q1. We account for sample uncertainty by bootstrapping the multi-country model estimated over four decades of quarterly observations.

The results found by the author show that the COVID-19 pandemic will lead to a significant fall in world output that is most likely long-lasting, with outcomes that are quite heterogeneous across countries and regions. While the impact on China and other emerging Asian economies are estimated to be less severe, the United States, the United Kingdom, and several other advanced economies may experience deeper and longer-lasting effects. Non-Asian emerging markets stand out for their vulnerability. We show that no country is immune to the economic fallout of the pandemic because of global interconnections as evidenced by the case of Sweden. We also find that long-term interest rates could fall significantly below their recent lows in core advanced economies, but this does not seem to be the case in emerging markets.

## **Other webinars**

### **COVID-19 webinar: Where to from here? Charting a course for resilience and recovery**

**Day:** 29 April 2020

**Speakers:** Warwick McKibbin (ANU)

**Where:** Australian Academy of Health and Medical Sciences

### **The global economy and COVID-19**

**Day:** 21 July 2020

**Speakers:** Renee McKibbin (ANU) and Warwick McKibbin (ANU)

**Where:** Australian National University

### **Mason Online Pandemic Modelling Forum: Global Macroeconomic Scenarios of the COVID-19 Pandemic**

**Day:** 9 July 2020

**Speaker:** Warwick McKibbin (ANU)

**Where:** George Mason University



## 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*.

## Management committee

Creina Day, Renée Fry-McKibbin, Ippei Fujiwara, Timo Henckel, Warwick McKibbin

## Administrator

Rossana Bastos-Pinto

## PhD students

Tsendsuren Batsuuri, Sud Dahal, Hang Hoang, Denny Irawan, Kate McKinnon, Thuong Nguyen, Augustus Panton, Phitawat Poonpolkulo, Lin Qi, Kai-Yun Tsai, Thomas Wangi, Timothy Watson, David Winter, Tony Wiskish, Daniel Silva Withmory, Beili Zhu

## Advisory board

Dr Chatib Basri, University of Indonesia

Professor Robert A Buckle, Victoria University of Wellington

Dr Peter Bushnell, The Treasury, New Zealand

Professor Carlo Carraro, University of Venice

Dr Malcolm Edey, Reserve Bank of Australia

Professor Jeffrey Frankel, Harvard University

Professor Reuven Glick, Federal Reserve Bank of San Francisco

Dr Arthur Grimes, Motu Economic and Public Policy Research

Dr Don Hanna, Fortress Investment Group

Dr Dale Henderson, Georgetown University

Prof Dr Cars H Hommes, University of Amsterdam

Dr Sharon Kozicki, Bank of Canada

Professor Allan Layton, University of Southern Queensland

Professor Guay C Lim, University of Melbourne

Professor Robert Mundell, Columbia University

Dr Bandid Nijathaworn, Bank of Thailand

Professor Maurice Obstfeld, University of California, Berkley

Professor Adrian Pagan, University of Sydney

Mr Nigel Ray, World Bank

Professor Jeffrey Sachs, Columbia University

Dr Ric Simes, Deloitte Access Economics

Mr Grant Spencer, Reserve Bank of New Zealand

Professor Heizo Takenaka, Keio University, Japan

Dr P Nandalal Weerasinghe, Central Bank of Sri Lanka

### **Advisory board - past members**

Professor Mardi Dungey (- 2018), Advisory Board member (2003-2018), University of Tasmania

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

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

Dr Martin Parkinson, Advisory Board member (2003-2015), The Treasury

## Program directors

Name	Institution	Program
Martin Berka	Massey University	Open Economy Macroeconomics program
Barbara Buchner	Climate Policy Initiative	Climate Change and Energy program
Paul Cashin	International Monetary Fund	Commodities and the Macroeconomy program
Bruce Chapman	The Australian National University	Growth, Demographics and Productivity program
Martin H Davies	Washington and Lee University	Globalisation and Trade program
Creina Day	The Australian National University	Growth, Demographics and Productivity program
Corrado Di Guilmi	University of Technology, Sydney	Behavioural Macroeconomics and Complexity program
Ippei Fujiwara	The Australian National University	Macroeconomic Policy Frameworks program, and Multi-Country Models and Methods program
Matthew Greenwood-Nimmo	University of Melbourne	Finance and the Macroeconomy program
Timo Henckel	The Australian National University	Behavioural Macroeconomics and Complexity program
Renée Fry-McKibbin	The Australian National University	Finance and the Macroeconomy program, and Commodities and the Macroeconomy program
Warwick McKibbin	The Australian National University	Multi-Country Models and Methods program, and Climate Change and Energy program
James Morley	The University of Sydney	Model Uncertainty and Macro-Econometrics
Bruce Preston	University of Melbourne	Macroeconomic Theory program
Toshitaka Sekine	Hitotsubashi University	Macroeconomic Policy Frameworks program
Christoph Thoenissen	University of Sheffield	Open Economy Macroeconomics program
Joaquin Vespignani	University of Tasmania	COVID-19 and the Macroeconomy
David Vines	University of Oxford	Globalisation and Trade program
Benjamin Wong	Reserve Bank of New Zealand	Model Uncertainty and Macro-Econometrics

## Doctoral student associates

Name	Institution	Program
Tsendsuren Batsuuri	The Australian National University	Multi-Country Models and Methods program and Climate Change and Energy program
Sud Dahal	The Australian National University	COVID-19 and the Macroeconomy
Roshen Fernando	The Australian National University	COVID-19 and the Macroeconomy
Hang Hoang	The Australian National University	Multi-Country Models and Methods program
Wee Chian Koh	The Australian National University	Commodities and the Macroeconomy program
Kate McKinnon	The Australian National University	Commodities and the Macroeconomy program
Thuong Nguyen	The Australian National University	Growth, Demographics and Productivity program
Fajar Oktiyanto	The Australian National University	Multi-Country Models and Methods program
Augustus Jablou Panton	The Australian National University	Finance and the Macroeconomy program, and Macroeconomic Policy Frameworks 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

## Research associates

Name	Institution	Program
Vitali Alexeev	University of Tasmania	Finance and the Macroeconomy program, and Commodities and the Macroeconomy program
Baris Alpaslan	The University of Manchester, UK	Growth, Demographics and Productivity program and COVID-19 and the Macroeconomy
Heather Anderson	Monash University	Model Uncertainty and Macro-Econometrics
Mikhail Anufriev	University of Technology, Sydney	Behavioural Macroeconomics and Complexity program
Filippo Arigoni	Bank of Slovenia	COVID-19 and the Macroeconomy
Kerim Peren Arin	Zayed University	Finance and the Macroeconomy program
John Baffes	The World Bank	Commodities and the Macroeconomy program
Girish Bahal	The University of Western Australia	Macroeconomic Theory program, and COVID-19 and the Macroeconomy
Faruk Balli	Massey University	Finance and the Macroeconomy program
Michelle L Barnes	Federal Reserve Bank of Boston	Finance and the Macroeconomy program
Christiane Baumeister	University of Notre Dame	Commodities and the Macroeconomy program, Model Uncertainty and Macro-Econometrics, and COVID-19 and the Macroeconomy
Antonio Andrés Bellofatto	University of Queensland	Macroeconomic Policy Frameworks program, and Macroeconomic Theory program
Gianluca Benigno	London School of Economics	Open Economy Macroeconomics program
Tino Berger	Georg-August University Göttingen	Model Uncertainty and Macro-Econometrics, and COVID-19 and the Macroeconomy
Rohan Best	Massey University	Climate Change and Energy program
Prasad Bhattacharya	Deakin University	Model Uncertainty and Macro-Econometrics, and COVID-19 and the Macroeconomy
Sambit Bhattacharyya	University of Sussex	Growth, Demographics and Productivity program
Saroj Bhattarai	University of Texas at Austin	COVID-19 and the Macroeconomy



Name	Institution	Program
Monisankar Bishnu	Indian Statistical Institute	Growth, Demographics and Productivity program, and Macroeconomic Theory program
Hilde C Bjørnland	Norwegian School of Management	Finance and the Macroeconomy program, Commodities and the Macroeconomy program, and COVID-19 and the Macroeconomy
Steven Bond-Smith	Curtin University	Globalisation and Trade program, and Macroeconomic Theory program
Alison Booth	The Australian National University	Growth, Demographics and Productivity program
Melisso Boschi	Senate of the Republic of Italy	Finance and the Macroeconomy program, and Macroeconomic Policy Frameworks program
Robert Breunig	The Australian National University	Growth, Demographics and Productivity program, and COVID-19 and the Macroeconomy
Markus Brueckner	The Australian National University	Commodities and the Macroeconomy program, and COVID-19 and the Macroeconomy
Ralph Bryant	Brookings Institution	Multi-Country Models and Methods program
Barbara Buchner	Climate Policy Initiative	COVID-19 and the Macroeconomy
Paul Burke	The Australian National University	Climate Change and Energy program
Giovanni Caggiano	Monash University	Macroeconomic Policy Frameworks program, and COVID-19 and the Macroeconomy
Yiyong Cai	The Treasury	Climate Change and Energy program
Gerard Caprio	Williams College	Finance and the Macroeconomy program
Efrem Castelnuovo	University of Padova	Macroeconomic Policy Frameworks program, and COVID-19 and the Macroeconomy
Joshua Chan	University of Technology Sydney	Model Uncertainty and Macro-Econometrics
Yoosoon Chang	Indiana University	Finance and the Macroeconomy program
Pratiti Chatterjee	University of New South Wales	COVID-19 and the Macroeconomy
Arpita Chatterjee	University of New South Wales	COVID-19 and the Macroeconomy

Name	Institution	Program
Yu-chin Chen	University of Washington	Open Economy Macroeconomics program, and Commodities and the Macroeconomy program
Sang-Wook (Stanley) Cho	University of New South Wales	COVID-19 and the Macroeconomy
Biplob Chowdhury	University of Tasmania	Finance and the Macroeconomy program, and COVID-19 and the Macroeconomy
Edda Claus	Wilfrid Laurier University	Finance and the Macroeconomy program
Adam Clements	Queensland University of Technology	Finance and the Macroeconomy program
Patrick J Coe	Carleton University	Model Uncertainty and Macro-Econometrics
Valentina Colombo	University of Bologna	Model Uncertainty and Macro-Econometrics
Mariarosaria Comunale	Bank of Lithuania	Open Economy Macroeconomics program, and COVID-19 and the Macroeconomy
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
Creina Day	The Australian National University	COVID-19 and the Macroeconomy
Gordon De Brouwer	Department of the Environment	Finance and the Macroeconomy program, and COVID-19 and the Macroeconomy
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
Corrado Di Guilmi	University of Technology, Sydney	COVID-19 and the Macroeconomy
Alexandre Dmitriev	The University of Auckland	Macroeconomic Theory program
Begona Dominguez	The University of Auckland	Macroeconomic Theory program, and COVID-19 and the Macroeconomy
Qingyuan Du	Monash University	Open Economy Macroeconomics program

Name	Institution	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, Macroeconomic Policy Frameworks program, and Model Uncertainty and Macro-Econometrics program
Joshua Epstein	Johns Hopkins University	Behavioural Macroeconomics and Complexity program
Laurent Ferrara	SKEMA Business School	Finance and the Macroeconomy program, and COVID-19 and the Macroeconomy
Shigeru Fujita	Federal Reserve Bank of Philadelphia	Macroeconomic Theory program
Ippei Fujiwara	The Australian National University	COVID-19 and the Macroeconomy
Martin Fukac	International Monetary Fund	Macroeconomic Theory program
Prasanna Gai	The University of Auckland	Macroeconomic Theory program, and COVID-19 and the Macroeconomy
Dinesh Gajurel	University of New Brunswick	Finance and the Macroeconomy program, and COVID-19 and the Macroeconomy
Giorgos Galanis	University of London	Behavioural Macroeconomics and Complexity program
Jaqueson K Galimberti	Auckland University of Technology	Behavioural Macroeconomics and Complexity program
Mauro Gallegati	Università Politecnica delle Marche	Behavioural Macroeconomics and Complexity program
Anthony Garratt	University of London, Birkbeck	Model Uncertainty and Macro-Econometrics
Christoph Gortz	University of Birmingham	Open Economy Macroeconomics program
R Quentin Grafton	The Australian National University	Climate Change and Energy program, and COVID-19 and the Macroeconomy
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

Name	Institution	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, and COVID-19 and the Macroeconomy
Qazi Haque	The University of Western Australia	Macroeconomic Theory program
Don Harding	La Trobe University	Model Uncertainty and Macroeconometrics
Iftexhar 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
Viktoria Hnatkovska	University of British Columbia	Open Economy Macroeconomics program
Mathias Hoffmann	University of Zurich	Open Economy Macroeconomics program, and COVID-19 and the Macroeconomy
Mathias Hoffmann	Deutsche Bundesbank	Open Economy Macroeconomics program
Cody Yu-Ling Hsiao	Macau University of Science and Technology	Finance and the Macroeconomy program, and COVID-19 and the Macroeconomy
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, and COVID-19 and the Macroeconomy
Karel Janda	University of Economics, Prague	Climate Change and Energy program
Raghebendra 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

Name	Institution	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, and COVID-19 and the Macroeconomy
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
Robert Kollman	Université Libre de Bruxelles	Open Economy Macroeconomics program, and COVID-19 and the Macroeconomy
Bonsoo Koo	Monash University	Finance and the Macroeconomy program, and Model Uncertainty and Macro-Econometrics
Ayhan Kose	The World Bank	Finance and the Macroeconomy program
Leo Krippner	Reserve Bank of New Zealand	Finance and the Macroeconomy 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
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
Mengheng Li	University of Technology Sydney	Model Uncertainty and Macro-Econometrics
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	CSIRO	Growth, Demographics and Productivity program, and 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, and COVID-19 and the Macroeconomy
Wilfredo Maldonado	University of São Paulo	Macroeconomic Theory program, and COVID-19 and the Macroeconomy
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; and COVID-19 and the Macroeconomy
Roland Meeks	University of Essex	Finance and the Macroeconomy 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

Name	Institution	Program
Kamiar Mohaddes	University of Cambridge	Commodities and the Macroeconomy program, and COVID-19 and the Macroeconomy
Arjuna W Mohottala	The Treasury	Finance and the Macroeconomy program
Masayuki Morikawa	METI - Japan	Growth, Demographics and Productivity program
James Morley	The University of Sydney	COVID-19 and the Macroeconomy
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, and COVID-19 and the Macroeconomy
James Nason	NC State University	Model Uncertainty and Macro-Econometrics program, and COVID-19 and the Macroeconomy
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
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, and COVID-19 and the Macroeconomy
Denise Osborn	University of Manchester	Model Uncertainty and Macro-Econometrics program
Gulcin Ozkan	The University of York	Open Economy Macroeconomics program, and COVID-19 and the Macroeconomy
Alessia Paccagnini	University College Dublin	Model Uncertainty and Macro-Econometrics program, and COVID-19 and the Macroeconomy



Name	Institution	Program
Woong Yong Park	Seoul National University	Model Uncertainty and Macro-Econometrics program
Laurent Pauwels	University of Sydney	Open Economy Macroeconomics program, Model Uncertainty and Macro-Econometrics program, and COVID-19 and the Macroeconomy
Oscar Pavlov	University of Tasmania	Macroeconomic Theory program
Victor Pontines	South East Asian Central Banks (SEACEN)	Finance and the Macroeconomy program, and COVID-19 and the Macroeconomy
Aubrey Poon	University of Strathclyde	Model Uncertainty and Macro-Econometrics program
Bruce Preston	University of Melbourne	COVID-19 and the Macroeconomy
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, and COVID-19 and the Macroeconomy
Eli Remolona	Asia School of Business - Malaysia	Finance and the Macroeconomy program and Macroeconomic Policy Frameworks 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

Name	Institution	Program
Alberto Russo	Università Politecnica delle Marche	Behavioural Macroeconomics and Complexity program
Sherrill Shaffer	University of Wyoming	Finance and the Macroeconomy 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, and COVID-19 and the Macroeconomy
Pierre Siklos	Wilfrid Laurier University	Finance and the Macroeconomy program, and COVID-19 and the Macroeconomy
Tara M Sinclair	The George Washington University	Model Uncertainty and Macro-Econometrics program, and COVID-19 and the Macroeconomy
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, and COVID-19 and the Macroeconomy
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
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

Name	Institution	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, and COVID-19 and the Macroeconomy
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
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, and COVID-19 and the Macroeconomy
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, and COVID-19 and the Macroeconomy
Justin Wolfers	University of Michigan	Behavioural Macroeconomics and Complexity program

Name	Institution	Program
Benjamin Wong	Monash University	Commodities and the Macroeconomy program, and COVID-19 and the Macroeconomy
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
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 Treasury	Finance and the Macroeconomy program
Akira Yakita	Nanzan University	Growth, Demographics and Productivity program
Akhtar Zaman	Toi Ohomai Institute of Technology	Globalisation and Trade program
Francesco Zanetti	University of Oxford	Macroeconomic Policy Frameworks program
Bo Zhang	Shanghai University	Model Uncertainty and Macro-Econometrics
Jasmine Zheng	Deloitte Access Economics	COVID-19 and the Macroeconomy
Yixiao Zhou	The Australian National University	Multi-Country Models and Methods program, Globalisation and Trade program, and COVID-19 and the Macroeconomy
Daniel Zizzo	Newcastle University	Behavioural Macroeconomics and Complexity program

## Visitors

**Alexander Chudik**  
Federal Reserve Bank of Dallas  
5 March 2020

## Funding

The table below summarizes CAMA funding for 2020.

<b>Income</b>	
Student fees	0.00
Other income	434,809.68
Internal sales	0.00
Transfer from other	118,688.00
Internal allocations	35,187.00
Operating grant	0.00
Investment income	0.00
<b>Total Income</b>	<b>588,684.68</b>
<b>Expenses</b>	
Salaries and related costs	469,155.34
Equipment - capital	0.00
Equipment - non-capital	707.27
Scholars expenses	74,784.68
Utilities and maintenance	0.00
Travel field & survey expenses	49,922.64
Expendable research materials	0.00
Contributions	10,000.00
Consultancies	2,800.00
Consumables	13,277.85
Depn & amort	0.00
Internal purchases	5,471.49
Other expenses	7,507.35
Contingency	0.00
<b>Total Expenditure</b>	<b>633,626.62</b>
<b>Current year operating result</b>	<b>(44,941.94)</b>
Transfer inflow/outflow	0.00
<b>Net current year operating result</b>	<b>(44,941.94)</b>
Prior year cash result	283,080.54
<b>Net operating position</b>	<b>238,138.60</b>

## **CAMA by numbers**

In 2020 CAMA:

Published **111** working papers and **6** newsletters

attracted **25** new affiliates

hosted, sponsored or participated in **28** events, including **3** seminars, **23** webinars and **2** conferences

received **1** visitor

was followed by **599** Twitter users

was a team of **227** research associates

## Contact

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

Email: [cama.admin@anu.edu.au](mailto: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](mailto:Warwick.McKibbin@anu.edu.au)

Administrator: Rossana Bastos Pinto

Ph: 61 2 6125 8108

E: [Rossana.Bastos@anu.edu.au](mailto:Rossana.Bastos@anu.edu.au)