

PROGRAM

Course: Computable General Equilibrium Modelling

Professors:

Professor Mark Horridge

Dr Robert Waschik

Assistant:

Tiago Barbosa Diniz

Period: 6-10 August

Time Schedule: 8.45am-12.30pm / 1.30pm-6pm

Classroom hours: 40 hours

Venue: Enap – SAIS Área 2A Brasília-DF

Goals:

Introducing participants to computable general equilibrium modelling and to the GEMPACK software used to solve equilibrium models.

Description:

The course focuses on a typical single-region applied general equilibrium model: the ORANI-G model of the Australian economy. Variants of the ORANI model of the Australian economy have been used extensively for policy analysis in Australia for more than two decades. [ORANI-G](#) (a generic version of ORANI) has been used as the basis of many single-country models including models of Thailand, China, Brazil, South Africa, Pakistan, the Philippines and Denmark. GEMPACK software is used by research workers in hundreds of different locations in about 80 countries around the world.

Contents:

- Basic theory and structure shared by most CGE models
- How such models are represented and solved using GEMPACK
- How to interpret and report model results.

Methodology:

The course will be presented using Australian data for the first 3.5 days, when the focus is on more instructive material. For the more interactive material over the final 1.5 days, group exercises will be conducted using Brazilian data. Course participants will receive a USB memory stick with course material that includes a directory containing the Brazilian data/model, so that at any time participants may compare results and data from Australian and Brazilian versions.

TIMETABLE

Session 1

Monday August 6th

9.00am-10.30am	Course Welcome and Introduction The Broad Structure of a CGE model - 4:oranig.ppt (1-19)
10.30am-11.00am	Morning Tea
11am-12.30pm	Hands-On Computing with ORANI-G: First simulation 2:FirstSim.doc 2*firstsim.xls

12.30pm-1.30pm Lunch

Session 2

Monday August 6th

1.30pm-3.15pm	Introduction to ORANI-G: Sets, Solution Method, the TAB file Computing: Interrogating the Data 2*firstsim.ppt 4:oranig.ppt (20-40)
3.15pm-3.45pm	Afternoon Tea
3.45pm-6.00pm	Theory: Core Coefficients - 4:oranig.ppt (41-60) Computing: Interrogating the Data - 6:HandsOnA.doc 6:HandsOnB.doc

Session 3

Tuesday August 7th

8.45am-10.30am	Theory: Production Structure - 4:Oranig.ppt (61-84) Computing: Closure and Homogeneity - 7:HandsonB.doc
10.30am-11.00am	Morning Tea (mid-session)
11am-12.30pm	Overview of GEMPACK (including condensation) - 2:GEMPACK.ppt

12.30pm-1.30pm Lunch

Session 4

Tuesday August 7th

1.30pm-3.45pm	Computing: Wage Cut Simulation - 8:Wagecut.doc Wage Cut Simulation: Analysis and Discussion - 8:Wagecut.ppt
3.45pm-4.15pm	Afternoon Tea
4.15pm-6.00pm	Computing: Wage Cut Simulation: Industry Results - 8:Wagecut.doc Wage Cut Discussion (industry results) - 8*Wagecut.xls 8*Wagechart.xls 8*WageAns.doc

Session 5
August 8th

8.45am-10.30am	Theory: Output mix: Export/Local mix, Capital creation 4:oranig.ppt (85-103) Computing: AnalyseGE & Tariff Simulation 1 - 9: Ant.doc 9*tarfsim.ppt
10.30am-10.50am	Morning Tea (mid-session)
10.50am-12.30pm	Theory: Household Demands 4:oranig.ppt (104-121)
12.30pm-1.30pm	Lunch

Session 6
August 8th

1.30pm-3.15pm	Theory: Other Final Demands, market clearing 4:oranig.ppt (122-144) Computing: Tariff Simulation 2 - 9: Ant.doc 9*AntAns.doc 9*Tarfcut.xls
3.15pm-3.45pm	Afternoon Tea (mid section)
3.45pm-6.00pm	Theory: Tariff simulation discussion - 4: 4:oranig.ppt Computing: Adding Equations to Model- 10:NewEq.doc

Session 7
August 9th

8.45am-10.30am	Theory: Purchasers Prices and Macros - 10:neweq.ppt 4:oranig.ppt (145-160) Theory: Investment, Labour Market, Closure - 4:oranig.ppt (161-199)
10.30am-10.50am	Morning Tea (mid-session)
10.50am-12.45pm	Theory: Regional Extension - t10:regional.ppt
12.45pm-1.45pm	Lunch

Session 8
August 9th

1.45pm-3.30pm	Official Photo Theory: Q&A session Group Projects: Allocation and Computing 11*Groupproj.doc 11*Groups.doc
3.30pm-4.00pm	Afternoon Tea (mid section)
4.00pm-6.00pm	Group Projects: Computing and Analysis - 11*Groupproj.doc 11*Groups.doc

Session 9

August 10th

8.45am-10.30am	Group Projects: Preparing Reports
10.30am-10.50am	Morning Tea
10.50am-12.30pm	Group Projects: Preparing Reports

12.30pm-1.30pm Lunch

Session 10

August 10th

1.30pm-3.30pm	Presentation of Reports on Group Simulations
3.30pm-4.00pm	Course Wrap-up

Bibliography:

<https://www.copsmodels.com/ftp/gpextra/oranig06doc.pdf>

<https://www.copsmodels.com/oranibook.htm>

Short Bio:



Professor Mark Horridge

PhD (UniMelb), MA (Cantab), BA (ANU)

Director GEMPACK Software, Centre of Policy Studies

Professor Mark Horridge is a Research Professor at Victoria University's Centre of Policy Studies (CoPS). From 2007 to 2013 Mark held a similar position at CoPS, Monash University. He holds a PhD in economics from the University of Melbourne.

Mark leads the small team behind GEMPACK software, the CGE modelling system developed at CoPS over many years by Ken Pearson and others.

He has also been involved in development of the MMRF and TERM regional CGE models that are used for Australian policy analysis. He has helped to build CGE models for many other countries, including China, Thailand, Finland, South Africa, Brazil, Poland, the Philippines, Japan, Vietnam, Indonesia, and Taiwan. Pursuant to these international projects Mark has undertaken around 60 overseas trips paid for by an external client. He has organised or taught in around 80 training courses at Monash or elsewhere.

Mark has published 26 refereed journal articles and 12 book chapters.

Mark has been associated with the Global Trade Analysis Project (external link) (GTAP) in various ways since its inception, and since 2009 is one of three 'members-at-large' of the GTAP Consortium or Advisory Board.



Dr Robert Waschik

PhD (Western University, London, Canada)

Senior Research Fellow, Centre of Policy Studies

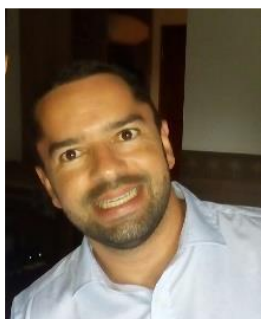
Robert Waschik is a Senior Research Fellow with the Centre of Policy Studies (CoPS).

Before joining CoPS in April 2015 he was a Senior Lecturer in the School of Economics at La Trobe University. He moved to Australia from his native Canada in July 2000, where he worked as an Assistant/Associate Professor in the School of Business at Wilfrid Laurier University in

Waterloo, Ontario. He has accumulated considerable experience as a university lecturer teaching subjects in international trade, public economics and general equilibrium modelling, among many others, and has supervised a number of Honours, masters and PhD students over the past 25 years.

Robert earned his PhD in Economics from Western University in London, Canada, in 1990. He has published 18 articles in refereed academic journals.

His recent research projects have included an investigation of the effects of international sanctions against Iran, a comparison of the Australian Federal government's Direct Action policy to abate greenhouse gas emissions with the recent Carbon Pollution Reduction Scheme, and trade creation and trade diversion effects of an Australia-China Free Trade Agreement. These research projects have all involved the use of Computable General Equilibrium models.



Tiago Barbosa Diniz

PhD Candidate, Applied Economics (ESALQ/USP)

PhD Candidate in Applied Economics, Tiago has been working with CGE models for the last 7 years, mostly for environmental and energy questions. His academic studies have been published in journals and conferences proceedings national and internationally. For his CGE study of the economic impacts of the Brazilian New Forest Code, he received awards as the VI Prêmio Dirceu Pessoa de Economia (2012), XIX Prêmio

Brasil de Economia (2013) and Prêmio Rui Miller Paiva (2016). For public and private sectors, he has been engaged in projects developing economic scenarios and analyzing regional and public policies.

He was a Visiting Researcher at the Centre of Policy Studies (CoPS), Victoria University, and he is currently an economist at Eletrobras CHESF and consultant. Tiago holds a Master's degree in applied economics from the University of São Paulo and a Bachelor's degree in economics from the Federal University of Pernambuco.