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The University of Western Australia  
Business School

**CONFERENCE REPORT ON**  
**THE ECONOMICS OF COMMODITY PRICES**  
**AND EXCHANGE RATES**

Conference Convenor: Ken Clements

Conference Coordinator: Mei Han

[http://www.ecom.uwa.edu.au/home/conference\\_on\\_the\\_economics\\_of\\_commodity\\_prices\\_and\\_exchange\\_rates](http://www.ecom.uwa.edu.au/home/conference_on_the_economics_of_commodity_prices_and_exchange_rates)

## **THE REPORT** \*

The conference on the Economics of Commodity Prices and Exchange Rates was held at the University Club at UWA on 9 June, 2006. There were 86 participants to the conference, and nine presenters among these. The conference attracted representatives from around 30 different institutions, covering Australian universities, government agencies and private companies, such as ANU, Curtin University, Federal Treasury, WA Department of Agriculture, WA Department of Industry and Resources, WA Department of Treasury and Finance, RBA, Ernst & Young, Mitsui, Rio Tinto, and Wesfarmers.

The current commodity boom is producing significant growth in the Australian economy, and in particular in WA. The issues discussed at the conference were very much influenced by this situation, examining the implications of this growth and of the resultant higher volatility in commodity and currency markets. The conference was spread over four sessions, covering topics concerning Iron Ore; China, India and Commodity Booms; Exchange Rates; and Fibre and Beverages.

The conference was opened by the Master of Ceremonies, John Roberts from ACIL Tasman, and Tracy Horton, Dean of the UWA Business School, gave the opening address.

The first session, on Iron Ore, commenced with a presentation by Paul Sukagawa from Mitsui Iron Ore Development, titled "Is Iron Ore Priced as a Commodity? Past and Current Practice". Sukagawa described a market for iron ore that only recently has made the transition to becoming considered as a commodity, and that this is a result of the explosion in Chinese demand. Whereas iron ore pricing previously was negotiated on an annual basis, creating a benchmark prevailing throughout the year, contracts are now increasingly being negotiated in the spot market. Paul Crompton from the UWA Business School provided the second part of the session with his presentation titled "Modelling World Iron Ore Supplies". His presentation provided an insight into the possible consequences of China's continuing insatiable demand for raw materials coupled with a planned tripling of Australian iron ore mine capacity. Australia's position as the second largest producer of high-grade iron ore in the world, and its geographical proximity to China (and other major Asian export markets), implies a significant comparative advantage over other higher-cost exporters.

The second session, on China, India and Commodity Booms, opened with a presentation by Yanrui Wu from the UWA Business School, titled "Economic Growth in China and India: Prospects and Implications". Wu described how rapid growth in the world's two most populous countries has been driven by rapid accumulation of capital and productivity growth, indicating the possibility of sustained high growth also in the coming decades. Qiang Ye, from the WA Department of Industry and Resources, presented the second paper, titled "Commodity Booms and their Impact on the WA Economy". The WA mineral and petroleum sector contributes around three-quarters of

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\* This was written by Inga Kristoffersen.

WA exports and around a quarter of gross state product. Qiang presented analysis of the future prospects for this sector in WA and effects on the WA economy. His results indicate continued expansion in employment and consumption, though the extent of such an expansion very much depends on whether the expansion in iron ore exports are ephemeral or sustainable. Qiang also identified industries for whom such expansion may be disadvantageous due to real appreciation of the exchange rate.

The third session, on Exchange Rates, opened with a presentation by Ken Clements of the UWA Business School and Renee Fry of the Australian National University and the University of Cambridge, titled “Commodity Currencies and Currency Commodities”. The presentation examined the empirical case for commodity prices significantly affecting the currencies of countries with a large commodity-based export sector, and for currency values significantly affecting commodity prices. Their results indicate that commodity values are more affected by currency values than vice versa. The second paper presented in this session was by Ken Clements and Yihui Lan, both of the UWA Business School. Their paper, titled “Real-Time Forecasts of Big Mac Exchange Rates”, was presented by Lan. The Economist magazine has over many years been producing the “Big Mac Index”, which uses Big Mac prices across various countries, and exchange rates, to evaluate the extent of currency over- and under-valuations in a PPP framework. Lan presented the results of using this information to forecast actual movements in exchange rates, indicating the Big Mac model is superior to a random walk model over medium- and long-term horizons.

The fourth session, on Fibre and Beverages, opened with a presentation by George Verikios of the UWA Business School, titled “World Trade Negotiations and Wool Prices”. Tariff barriers on wool and wool-related goods impose significant costs on exporting regions and hence distort prices on such goods. Verikios presented estimates of these distortionary effects, using a global general equilibrium model. The second presentation of this session was given by James Fogarty of the UWA Business School and was titled “How is Expensive Wine Priced?”. Fogarty presented findings indicating that once comprehensive reputation indicators are considered, the current quality ratings a wine receives is not important to the pricing of premium Australian wine.

Some of the papers and presentations are available at:

[http://www.ecom.uwa.edu.au/home/conference\\_on\\_the\\_economics\\_of\\_commodity\\_prices\\_and\\_exchange\\_rates](http://www.ecom.uwa.edu.au/home/conference_on_the_economics_of_commodity_prices_and_exchange_rates)

The conference was generously supported financially by the UWA Business School. The administrative arrangements for the conference were ably handled by Mei Han with the assistance of Derby Voon.

In what follows, further information is given about the sessions, papers, the speakers and participants.

## THE SESSIONS

### Welcome

**John Roberts**, Master of Ceremonies, ACIL Tasman

### Opening Address

**Tracey Horton**, Dean, UWA Business School

### Session 1: Iron Ore

**Paul Sukagawa**, Mitsui Iron Ore Development

*“Is Iron Ore Priced as a Commodity? Past and Current Practice”*

**Paul Crompton**, University of Western Australia

*“Modelling World Iron Ore Supplies”*

### Session 2: China, India and Commodity Booms

**Yanrui Wu**, University of Western Australia

*“Economic Growth in China and India: Prospects and Implications”*

**Qiang Ye**, WA Department of Industry and Resources

*“Commodity Booms and their Impacts on the WA Economy”*

### Session 3: Exchange Rates

**Kenneth Clements**, University of Western Australia and

**Renée Fry**, Australian National University and University of Cambridge

*“Commodity Currencies and Currency Commodities”*

**Kenneth Clements and Yihui Lan**, University of Western Australia

*“Real-Time Forecasts of Big Mac Exchange Rates”*

### Session 4: Fibre and Beverages

**George Verikios**, University of Western Australia

*“World Trade Negotiations and Wool Prices”*

**James Fogarty**, University of Western Australia

*“How is Expensive Wine Priced?”*

## **THE ABSTRACTS**

### **Is Iron Ore Priced as a Commodity? Past and Current Practice**

Paul Sukagawa

Mitsui Iron Ore Development

Iron ore has not been considered a commodity for a long time. Iron ore prices have been negotiated annually to set a 'Bench Mark' price which prevails for one full year throughout the world market. Now due to the explosion of demand from China, this market has been turned upside down, and some people consider that iron ore has joined the 'Commodity Club'. This presentation discusses the original concept of iron ore pricing, its operation in the past and the recent drastic change in the market climate.

### **Modelling World Iron Ore Supplies**

Paul Crompton

University of Western Australia

Western Australia is the second largest producer of high grade iron ore in the world, behind Brazil. Today, the global iron ore industry is undergoing massive and rapid expansion to keep pace with China's insatiable demand for raw materials, with Australian iron ore producers seeking to triple iron ore mine capacity over the next decade. This paper develops a global model of sea-borne iron ore trade capable of identifying optimal trade flows between major producers and consumers, taking into consideration variables such as production and transport costs, mine capacity, exchange rates and consumer demand. Of particular interest in this paper is the competitive position of Australian iron ore producers to supply increased quantities of iron ore to China.

### **Economic Growth in China and India: Prospects and Implications**

Yanrui Wu

University of Western Australia

Rapid growth in China and India has important implications not only for the world's two most populous nations but also in the rest of the world. This paper contributes to the literature by examining and comparing several issues associated with economic growth in the two nations. In particular, it attempts to investigate the sources of economic growth and hence discuss the growth prospects in China and India. It is found that recent high growth in the two countries has been driven by rapid accumulation of capital and productivity growth. The latter indicates the possibility of sustained, high growth in China and India in the coming decades. Especially, this growth will be strong in China's service sector and India's manufacturing industry. This growth will also present challenges to the two Asian giants as well as the rest of the world in terms of raw material supply such as energy which is discussed in this paper.

## **Commodity Booms and their Impacts on the WA Economy**

Qiang Ye

WA Department of Industry and Resources

Western Australia is a resource-rich province. Its mineral and petroleum sector contributes around three-quarters of State exports and around a quarter of gross state product. In the last few years, WA's resources industry continued to enjoy exceptional conditions created by strong international demand for commodities. This paper aims to examine the impact of this commodity boom in the iron ore sector on the WA economy using a general equilibrium approach.

## **Commodity Currencies and Currency Commodities**

Kenneth W Clements

University of Western Australia

Renée Fry

Australian National University and

The University of Cambridge

There is a large literature on the influence of commodity prices on the currencies of countries with a large commodity based export sector such as Australia, New Zealand and Canada. There is also a literature examining the impact of currency values on commodity prices, such as metals, energy, food, beverages and agriculture. This paper merges these two strands of the literature by using the Kalman filter to jointly estimate the determinants of the prices of these currencies and commodities. Included in the specification is an allowance for spillovers between the two asset types. The methodology is able to determine the extent that currencies are indeed driven by commodities, or that commodities are driven by currencies over the period 1975 to 2005.

## **Real-Time Forecasts of Big Mac Exchange Rates**

Kenneth W Clements

Yihui Lan

University of Western Australia

Given their extreme volatility, it is notoriously difficult to forecast the short-term fluctuations of exchange rates. But over the longer term, purchasing power parity (PPP) theory seems to track exchange rates reasonably well. Using The Economist's version of PPP, the Big Mac Index, this paper adopts an innovative methodology to examine the statistical properties of major exchange rates and to estimate their long-run equilibrium values. The time paths of exchange rates adjusting to their future values are then derived, from which exchange-rate forecasts at all horizons, together with realistic uncertainty measures, are determined. We illustrate how our procedure can be applied in real time to obtain forecasts of exchange rates that are as up to date as possible.

## **World Trade Negotiations and Wool Prices**

George Verikios

University of Western Australia

A small but important subset of past and future world trade negotiations are tariff barriers on wool and wool-related goods. Taken as a whole, these barriers impose significant costs on exporting regions and significantly distort the prices of wool and wool-related goods. The distortionary effects of past and future tariff barriers are estimated -- with a focus on the effects on prices, output, employment and regional and producer welfare -- using a global general equilibrium model with a detailed depiction of the world wool market.

## **How is Expensive Wine Priced?**

James Fogarty

University of Western Australia

Hedonic price analysis is a technique used to allocate monetary values to the underlying characteristics embodied in a good. This paper extends the findings of previous hedonic price studies for wine by introducing viticulture and wine tasting theory to guide the selection of potentially appropriate attributes, and considering supply side issues. In particular, the role reputation attributes play is examined in detail. The findings show that for the pricing of premium Australian wine, once comprehensive reputation indicators are considered, the current quality rating a wine receives is not important.

## **THE SPEAKERS**

**Ken Clements** has been at UWA for 25 years as Professor of Economics, and is currently Chair of the Economics Program. He is a generalist economist with interests in international finance, monetary economics and the economics of drugs. Professor Clements has been involved in a number of research projects including: Mining and the WA Economy, Exchange-Rate Economics, and Economic Aspects of Marijuana. Recent papers include “Three Facts about Marijuana Prices” (*Australian Journal of Agricultural and Resource Economics*, 2004); “Larry Sjaastad, The Last Chicagoan” (*Journal of International Money and Finance*, 2005); “Pricing and Packaging: The Case of Marijuana” (*Journal of Business*, forthcoming); and “Exchange Rates, Productivity, Poverty and Inequality” (with Y. Lan, *Applied Economics*, forthcoming).

**Paul Crompton** has taught economics since 1990 at the University of Western Australia, the University of Tasmania and Curtin University. His research interests focus on the relationship between the macroeconomy and the mineral commodity markets. At present he is developing a global forecasting model of the world iron ore and steel industry and a model of global iron ore supply using linear programming techniques. Dr Crompton also works regularly as an economic consultant to BHP Billiton.

**James Fogarty** completed his PhD, Wine Investment, Pricing, and Substitutes in November 2005, and is currently employed as an Associate Lecture in the Economics Program, University of Western Australia. His research interests are related to using hedonic pricing and demand analysis to better understand wine markets.

**Renée Fry** is a Fellow at the Centre for Applied Macroeconomic Analysis at the Australian National University, Canberra, and is also a research associate at the Cambridge Endowment for Research in Finance at the University of Cambridge, UK. Prior to joining the Australian National University, she also held positions of Lecturer at the Queensland University of Technology, and Senior Analyst at the ANZ Banking Corporation. Her research interests are related to empirical modelling of financial markets and the macroeconomy, with an emphasis on modelling global financial market and macroeconomic linkages across countries. This research has led her to collaborate with various researchers at the IMF, the University of Cambridge, Trinity College and the University of Melbourne amongst others.

**Tracey Horton** is currently the Dean of the UWA Business School. She is also the Deputy Chair of the Water Corporation, Chair of D'Orsogna, and a Trustee and Governor of the Foundation of the West Australian Museum. She graduated from UWA with a Bachelor of Economics with first class honours and has also completed a Master of Business Administration from Stanford University in California, graduating as an Arjay Miller Scholar. Following an early career as an economist with the Reserve Bank of Australia, Tracey worked in the United States with Bain & Company -- an international management consulting firm -- before returning to Perth in 2000 where she was a Director of Poynton & Partners and GEM Consulting.

**Yihui Lan** is currently an Associate Lecturer in the Financial Studies Discipline at the University of Western Australia. Her main research interests are international finance, exchange rate economics, index numbers and demand analysis. After completing her PhD studies in international economics in 2003 at UWA, Yihui worked in the Economic Research Center as a Research Fellow. She has been involved in several ARC research projects, such as stochastic index numbers, exchange rates and commodity prices, international consumption patterns, modelling marijuana consumption, and applied demand analysis.

**John Roberts** is a Senior Consultant in the Perth Office of the economic consultancy firm, ACIL Tasman. He has over 35 years experience in economic analysis and policy development, strategic planning and business development in a number of key sectors, including mining and energy, industry, water, agriculture, health and education. Over this time he worked in a number of agencies including the Water Corporation and the Departments of Resources Development, Commerce and Trade and Agriculture. Since joining ACIL Tasman in late 2002 John has undertaken around 30 consultancies covering business development and strategic planning, research and development, water policy, industry organisation and public policy. John is an Adjunct Lecturer in economics in the Business School at UWA.

**M. Paul Sukagawa** is the President and Management Director at Mitsui Iron Ore Development Pty. Ltd. After graduating from Sophia University, Tokyo, he joined Mitsui & Co. Ltd., and has worked for the company ever since. Mr Sukagawa has held senior positions for Mutsui in London, New York, Perth and Tokyo. Before returning to Perth in 2004, he was the Chief Operating Officer of Mutsui's Iron and Steel Raw Materials Unit, Tokyo. He has served two terms as the Chairman of the Japan Chamber of Commerce in WA, is Vice Chairman of the International Business Council, and will become the Chairman of Japanese Association in WA in mid-2006.

**George Verikios** is a Research Fellow with the Economic Research Centre at the University of Western Australia. He has previously worked at the Centre of Policy Studies, Monash University and the Productivity Commission. His principal research interests are quantitative economic issues, including multilateral manufacturing and services trade liberalisation, unilateral trade liberalisation by Australia, the distributional effects of microeconomic reform of infrastructure industries in Australia, and productivity and alternative measures of real output for service industries in Australia. He is currently working on a three-year ARC project titled Economic Aspects of Wool in Western Australia.

**Yanrui Wu** is currently an Associate Professor of the Economics Program at the University of Western Australia. He is an economist specialising in development economics, international trade and applied econometric modelling. His research interests include the Chinese and Asian economies, productivity analysis, economic growth and international economics. He has published extensively in these fields. He is the author of several books such as Productive Performance in Chinese Enterprises (Macmillan, 1996), China's Consumer Revolution (Edward Elgar Publishers, 1999), The Macroeconomics of East Asian Growth (Edward Elgar Publishers, 2002) and China's Economic Growth (RoutledgeCurzon, 2004).

**Qiang Ye** is a Senior Economist with the Department of Industry and Resources Western Australia. He has previously worked at the Australian Bureau of Agricultural and Resource Economics and at the Economic Research Centre of The University of Western Australia. He holds a Ph.D. in Economics from the University of Western Australia. His principal research interests are in the application of large multi-sectoral and multi-regional economic models for policy analysis, such as economic evaluation of large resource/infrastructure projects and trade liberalisation issues.

## THE PARTICIPANTS

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7. Jennifer Chang	Federal Treasury
8. Peter Chong	ACIL Tasman
9. Virginia Christie	RBA
10. David Christmas	WA Dept of Treasury and Finance
11. Lisa Church	Wesfarmers
12. Ken Clements	UWA Business School (Speaker)
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(Continued)

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