



## Research in Progress: March 2011

Current research, building capability, and dissemination activities

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## 1. Environmental regulation

### 1.1. Climate Change

Suzi Kerr is leading the “Integrated Economics of Climate Change” project, funded through a major FRST (now MSI) grant and carried out by the EcoClimate collaboration ([www.ecoclimate.org.nz](http://www.ecoclimate.org.nz)). This project combines practical policy design with longer-term integrated model development. Currently the project’s emphasis is on the impact of mitigation policies on agriculture and forestry emissions, as well as building a decision framework for infrastructure and early evaluation of the emissions trading system in forestry. Suzi is also extending earlier research on avoiding deforestation and degradation (and the associated emissions) in developing countries, as a part of the international climate change mitigation effort.

The simulation model the Integrated Economics project uses to assess policies is a partial equilibrium model of rural land use. Motu’s Land Use in Rural New Zealand (LURNZ) modelling effort, designed to assess the impact of policies intended to alter land use decisions in rural areas, has recently been released to researchers in a beta version. Current work on the project is on improving methodologies to predict land use change and to simulate land use change spatially. Motu has also improved ways to project greenhouse gas emissions from the forestry sector. There is also a strong focus on enhancing LURNZ’s robustness, enriching its results and making it more user friendly through a better graphical user interface.

Motu is in the second year of a project, “Coordination and Co-operation for Effective Climate Policy Design and Implementation”, funded by MAF to provide empirical evidence and a clear conceptual framework to encourage cooperation, enabling the Emissions Trading System (ETS) to be applied effectively in agriculture, and to facilitate the coordination required for the rapid uptake of new adaptation and mitigation technology. Andrew Coleman is leading this research. He is presently writing a paper investigating how the application of non-mandatory schemes could accelerate the development and adoption of new technologies that respond to climate change by allowing constructive solutions to evolve in circumstances where there are wedges between the public and private costs and benefits of private activities.

Levi Timar is using LURNZ to model the effects of the ETS and any free allocation of NZUs on the costs borne or benefits received by landowners under the ETS. He is also estimating the drivers of land values to understand how impacts on profitability will be reflected in changes in rural equity. As part of this, Andrew is undertaking research on ways carbon forward markets and futures markets can be reconfigured into debt markets to enhance the attractiveness of the Emissions Trading Scheme to foresters, and to enhance industrial investments that reduce carbon emissions. With a Motu intern he has also explored the ability of New Zealand farmers to selectively target high value international markets to minimise the revenue impacts of a change in production costs.

Under this programme, Motu, in collaboration with EcoClimate, has also started a dialogue group on how to efficiently control agricultural emissions in the medium term. The dialogue process will draw on and provide feedback to the research discussed above and look to ensure that agricultural emissions are addressed in a way that that is robust, effective, efficient and fair. The group, which is made up of farmers, tangata whenua, and representatives from farm industry groups, NGOs, and the government, and will be informed by a wide range of climate change experts from many different institutions, will meet for the first time in late March. As a complement to this group we will be enhancing our emissions trading games as a tool to facilitate lay-people’s understanding of how the emissions trading system would affect agriculture.

### 1.2. Nutrient Trading and Water Quality

Motu is leading “Markets and Water Quality”, an MSI funded joint project with NIWA, GNS and others in which researchers design and simulate different nutrient regulatory approaches for the

Lake Rotorua catchment and work with a group of local stakeholders to develop practical policy. Suzi Kerr leads this research, which is in the fourth year of a major FRST (MSI) grant. The project combines economics, law, hydrology, and other disciplines in an attempt to explore these challenging regulatory design problems from all angles. Present work on this project involves a theoretical and literature based exploration of how administration, trading and mitigation costs can be jointly minimised, assessment of the current state of knowledge on the costs of on-farm nitrogen mitigation options (beginning with a workshop in late April), and the development of NManager, a simulation model of how different land management and use policies, including but not limited to nutrient trading, that achieve the same water quality effects, vary in cost. It is planned that the project will eventually be applicable to water quality in other major New Zealand catchments. As a first step toward this, we have recently signed a contract to, jointly with NIWA, produce national maps of nutrient loads, historically, currently, and in two future scenarios.

### 1.3. Publications since November 2010

- Kerr, Suzi, Regina Betz, Stefan Seifert, and Peter Cramton. Forthcoming. "Auctioning Greenhouse Gas Emissions Permits in Australia," *Australian Journal of Agricultural and Resource Economics*.

## 2. Home ownership and housing

### 2.1. Home ownership and housing markets

In a Marsden-funded programme on home ownership headed by Arthur Grimes and Steve Stillman, Motu is examining whether home ownership leads to better individual and community outcomes. By examining the direct and indirect effects of home ownership, Motu researchers aim to provide firmer empirical foundations for debates on the importance of home ownership. Current projects are focussing on the impact of homeownership on school election participation, impact of homeownership on community social capital outcomes, impact of homeownership on life satisfaction, financial satisfaction and satisfaction with family relationships, and impacts of sale of state houses (separately to tenants and to other owners) on neighbourhood outcomes. The team is also measuring trends in homeownership rates (as recorded by the census) over time in a consistent manner, and comparing census data on state houses with official state housing data to assess the accuracy of the census data across area units (suburbs).

Arthur is leading a collaborative research effort to evaluate the effectiveness of the Government's New Zealand Insulation Fund (NZIF) with regards to improvements in health outcomes and reduction in household energy usage. The project involves Motu, the University of Otago Wellington School of Medicine, Covec, and Victoria University of Wellington. The study runs over 18 months. Ethics approval has been granted to obtain the necessary health records of patients for the study by the Multi-Region Ethics Committee of the Ministry of Health, and initial health data has been obtained. Monthly energy data at the household level has been sought from all five major energy companies (and received, so far, from three); initial tests shows that new insulation reduces energy demand while new heating installations increase energy demand, with the main effects being over winter.

Building on the work of 2009/2010 summer intern Nick Tarrant, Arthur is working with Mark Holmes of University of Waikato to examine the linkages between house price movements both across New Zealand, and between major cities in Australasia.

### 2.2. Publications since November 2010

- Roskrige, Matthew, Arthur Grimes, Philip McCann and Jacques Poot. 2011. "Homeownership and Social Capital in New Zealand." *Motu Working Paper 11-02*.

- [Olssen, Alex, Hugh McDonald, Arthur Grimes & Steve Stillman. 2010. "A State Housing Database: 1993-2009", \*Motu Working Paper\* 10-13.](#)

### 3. Economic geography

#### 3.1. Infrastructure

Arthur is leading the programme on Infrastructure, initially funded by a four-year FRST grant (that finished in September 2010). To date, the programme has analysed impacts of planning rules (Auckland's Metropolitan Urban Limit); Auckland's Northern Motorway extension; irrigation in the Mackenzie District of South Canterbury; broadband on firm productivity; rural processing plant closures; local authority "social capital" and other expenditures on local community outcomes; impacts of ports on exporting firms; and effects of passenger rail upgrades in Auckland.

Arthur is extending a separate piece funded through the Centre for Advanced Engineering New Zealand (CAENZ) examining aspects of cost-benefit analysis pertaining to infrastructure investments, that will be presented to the European Regional Science Association congress in Barcelona in September. In work that crosses into the "environmental regulation" space, he is also examining the implications for infrastructure planning of potential climate change.

#### 3.2. Cities and Agglomeration

Dave Maré and Andrew are completing a study of the determinants of firm and population location in Auckland. This work is being undertaken for the NZ Government Auckland Policy Office. The study summarises patterns of residential location for various population subgroups, and patterns of firm location for various industry groups. It investigates the influence of selected local amenities, land prices, and the composition of local population and employment, on the location choices of entering firms and individuals. It also analyses productivity effects of local area characteristics. The study uses data from the Census of Population and Dwellings, QVNZ, Statistics New Zealand's prototype Longitudinal Business Database, and various GIS data sources. This study builds on work that Dave has been doing over recent years on agglomeration and productivity. In related work, Dave is working with Motu affiliate Jacques Poot from the University of Waikato and former Motu intern Ruth Pinkerton to examine residential location patterns of immigrants in Auckland.

Arthur was funded by NZ Government Auckland Policy Office to co-write a paper (with Philip McCann and Jason leVaillant) comparing Auckland's performance with regard to shares of knowledge-intensive industries and high-skilled occupations within its economy relative to other cities in New Zealand, Australia and Europe. This paper will be released as an MED Occasional Paper in March.

#### 3.3. Publications since November 2010

- [Roskrug, Matthew, Arthur Grimes, Philip McCann and Jacques Poot. Forthcoming. "Social Capital and Regional Social Infrastructure Investment: Evidence from New Zealand", \*International Regional Science Review\*.](#)
- [Grimes, Arthur. 2011. "Strategic Transport Choices", \*Motu Note\* #5](#)
- [Fabling, Richard, Arthur Grimes and Lynda Sanderson. 2011. "Any Port in a Storm? The Impact of New Port Infrastructure on New Zealand Exporter Behaviour", \*Reserve Bank of New Zealand Discussion Paper\* DP2011/01, Reserve Bank of New Zealand: Wellington.](#)
- [Coleman, A.M.G. 2010. "Transport Infrastructure, Lock-out and Urban Form," \*Policy Quarterly\*, 6:4, pp. 23-7.](#)

- Grimes, Arthur. 2010. "Strategic Transport Choices", *Motu Note #5*
- Cochrane, William, Arthur Grimes, Philip McCann and Jacques Poot. "The Spatial Impact of Local Infrastructural Investment in New Zealand", *Motu Working Paper 10-12*.

## 4. Labour and population economics

### 4.1. Migration

Steve continues work on a project with John Gibson and David McKenzie (World Bank) based on the Pacific Island-New Zealand Migrant Survey (PINZMS) and the Samoa Labour Mobility Survey (SLMS). These are comprehensive cross-country household surveys designed to measure multiple aspects of the migration process and both allow comparisons between successful and unsuccessful ballot participants. They have recently finished papers that look at the impact of migration on blood pressure and stress among migrants and examine the formation of migrant expectations about how well they will do in New Zealand. They are currently working on a papers which examines the impact of migration on multiple measures of living standards and how this depends on one's relative position in society.

Steve is involved with another migration project along with Malathi Velamuri (Victoria University of Wellington, Motu Affiliate), Mathias Sinning (Australia National University) and Deborah Cobb-Clark (Melbourne Institute, Motu Affiliate), focused on self-selection among international and trans-Tasman migrants. This work examines new migrant's decisions to settle in New Zealand versus Australia, and the location decisions of both New Zealanders and Australians. Research has been recently completed that examines the extent to which returns to human capital differ in New Zealand and Australia for otherwise similar workers. They are currently working on a paper which examines the relationship between trans-Tasman migration flows and the characteristics of different local areas in both countries.

Steve and Jacques Poot are also working on a project using census data to examine how immigrant outcomes compare to those for similar NZ-born. Unique to previous work, this study is examining the role of language skills in the adjustment process.

### 4.2. Firm Performance and Labour Dynamics

Dave and Dean Hyslop (Victoria University of Wellington, Motu Senior Research Associate) are examining the link between firm productivity and the skill composition of firms' workforces. This work uses Statistics New Zealand's Linked Employer-Employee Database, and is part of the Department of Labour-led LEED Research Programme.

Dave is also working with Richard Fabling (RBNZ) to look at the link between workforce composition, including the presence of migrants, and firm productivity. This extends previous work by Dave, Steve and Richard on links between workforce composition and innovation. Funding assistance has been received from the Department of Labour.

Dave and Richard are currently documenting the methods that they have developed for estimating firm productivity using data from Statistics New Zealand's prototype Longitudinal Business Database (LBD).

### 4.3. Consumption

Steve, Dave, Trinh Le, Dean Hyslop, John Gibson (University of Waikato, Motu Senior Research Associate), and Grant Scobie (Treasury) are collaborating on a project funded by the Statistics New Zealand Official Statistics Research Programme, investigating the relationship between household income and expenditure using data from the Household Economic Survey (HES). By using

expenditure data to supplement income information, this analysis provides new information on the level of, and changes over time in, poverty and inequality in New Zealand.

#### 4.4. Economic shocks

In a Marsden-funded programme on the impact of economic shocks headed by Steve, Dave, and John Gibson, Motu is using data from Statistics New Zealand's longitudinal Survey of Family, Income and Employment (SoFIE) and the Household, Income, Labour Dynamics in Australia (HILDA) survey to examine how events, such as job loss and the onset of health problems, impact on individual and household wellbeing. In current work, Steve, John, Trinh Le and Dave are working with Eina Wong to look at the prevalence of economic shocks in both New Zealand and Australia, and Steve and Arthur are examining the relationship between house price inflation, savings in other assets and labour supply decision.

#### 4.5. Health and Crime

Steve is working on a project with Jackie Cumming (Victoria University of Wellington) evaluating the impacts of the Primary Health Care Strategy (PHCS) on the fees patients pay when they visit the GP, access to and utilisation of primary health care services, use of secondary care services, and health status. Current research examines the extent to which the PHCS altered the fees that different individuals pay for health services in New Zealand.

Steve is also currently working with Malathi Velamuri on a project examining the impact of crime victimisation and incarceration on labour-market outcomes and other measures of wellbeing, using longitudinal data from the Household, Income and Labour Dynamics of Australia (HILDA) survey.

#### 4.6. Publications since November 2010

- Gibson, John, David McKenzie and Steven Stillman. Forthcoming. "The Impacts of International Migration on Remaining Household Members: Omnibus Results from a Migration Lottery Program." *Review of Economics and Statistics*.
- Crichton, Sarah, Steven Stillman and Dean Hyslop. Forthcoming. "Returning to Work from Injury: Longitudinal Evidence on Employment and Earnings." *Industrial and Labor Relations Review*.
- Stillman, Steven, John Gibson and David McKenzie. Forthcoming. "The Impact of Immigration on Child Health: Experimental Evidence From a Migration Lottery Program." *Economic Inquiry*.
- Maré, D. C., and Fabling, R. Forthcoming. "Productivity and local workforce composition," *Motu Working Paper* 11-06.
- Fabling, Richard. 2011. "Keeping it Together: Tracking Firms in New Zealand's Longitudinal Business Database". *Motu Working Paper* 11-01.
- Gibson, John, David McKenzie and Steven Stillman. 2011. "What Happens to Diet and Child Health when Migration Splits Households? Evidence from a Migration Lottery Program," *Food Policy, Special Issue: Migration and Food Security* 36:1, pp. 7–15.
- Maré, D. C., Fabling, R. and Stillman, S. (2010). "The impact of Immigration and Local Workforce Characteristics on Innovation", *Economic Impacts of Immigration Working Paper Series*, New Zealand Department of Labour (December)
- Hyslop, D. and Maré, D. C. 2010. "The Annual Employment Mix of Workers and Firms, and the Part-Time Earnings Gap in New Zealand," *Australian Journal of Labour Economics*, 13:3, pp. 331–52.

## 5. Macroeconomics, Monetary Economics and Economic Performance

Andrew Coleman, together with Ozer Karagedikli (RBNZ), completed a research note on the way financial surprises affect forward exchange rates. Together with Manu de Veirman (RBNZ), Andrew is also using an especially constructed Statistics New Zealand database to research the extent that temporary discounts have permanent effects on the price level and the inflation rate in New Zealand.

Andrew participated in the Saving Working Group and was one of the authors of the Savings Working Group report delivered to the Government in January.

### 5.1. Publications since November 2010

- Coleman, A.M.G., and Özer Karagedikli. Forthcoming. "The Relative Size of New Zealand's Exchange Rate and Interest Rate Responses to News," *North American Journal of Economics and Finance*.
- Coleman, A.M.G. Forthcoming. "Uncovering Uncovered Interest Parity during the Classical Gold Standard Era, 1888–1905," *North American Journal of Economics and Finance*.
- Coleman, A.M.G. 2010. "The Long Term Impact of Capital Gains Taxes in New Zealand," *New Zealand Economic Papers*, 44:2, pp. 159–77.

## 6. Building research and public policy capability

Motu continues to build research capability through training junior research analysts, employing interns, and awarding scholarships for young economists. We run workshops and seminars, and collaborate with public and private sector researchers and policy makers. We work to create effective research and public policy networks and linkages.

Motu's Wellington Public Policy Seminar Series features internationally-recognised speakers. It aims to encourage informed debate on important economic and public policy issues. Based on the success of the Wellington series, Motu in cooperation with Auckland University Masters of Public Policy Programme puts on the Auckland Public Policy Series. This series addresses public policy issues of key importance to the Auckland region and its residents. We regularly host international speakers for both series. Information on past and upcoming seminars in Auckland and Wellington is available at [www.motu.org.nz/building-capacity](http://www.motu.org.nz/building-capacity).

Internships assist young researchers to build a firm skills base, strengthening New Zealand's research networks and empirical research capability. Bobby Turongo Brooks (Ngāti Maniapoto, Tainui and Ngāpuhi) is Motu's Maori intern in 2010. Bobby has a Master's of Science in Chemistry, and is currently completing a Graduate Diploma in Economics at the University of Waikato. Bobby is contributing to an examination of reforestation policy in New Zealand as part of Motu's programme in environmental economics.

Our scholarships support young academics to gain the skills necessary to become excellent researchers. Our new Motu Thesis Scholarship recipient is Dan Bidois (Ngāti Maniapoto) is studying toward a Masters of Public Policy at the Harvard Kennedy School in Cambridge, Massachusetts. He is interested in public policy solutions to address the ethnic achievement gap in New Zealand and the United States. Motu awards one Thesis Scholarship per year to a promising university student of Māori descent. Through this scholarship, we hope to enhance Māori research capability and encourage students of Māori descent to develop an interest in researching topics relevant to public policy development.

Motu's senior fellows build research capability through their work with universities. This includes research collaboration, teaching, and supervising thesis students. Dave and Steve have been appointed adjunct professors of Economics at the University of Waikato, joining Arthur who has been an adjunct professor at the university since 2002. They have joined as part of the University's initiative to establish the National Institute of Demographic and Economic Analysis (NIDEA). They are also involved in supervising graduate students.

NIDEA was successfully launched in November. Colin James and several senior fellows attended. Colin spoke at the opening. A half day research seminar followed the opening. Recently a meeting took place with research leaders including Steve and Dave, who are "theme leaders" for NIDEA.

Dave was an external advisor to the Department of Labour for their review of immigration policy.

### *Teaching*

Motu researchers also work to build research capability through teaching, both at universities and through courses at Motu. Most recently, Steve Stillman and Dave Maré taught a three day course on causal analysis at Motu for eighteen students, and received excellent feedback on the high quality of the course.

Suzi Kerr has recently returned from Stanford University, where she was a Visiting Professor. While she was there, she researched how we can avoid deforestation in developing countries. She also taught graduate and undergraduate level environmental economics.

During the last year, Steve Stillman has been a Visiting Professor at the Chair for Statistics and Empirical Economic Research, University of Zurich where he taught seminars on applied econometrics and empirical methods for labour economics. Steve is currently teaching an honours level course in labour market economics at Victoria University.

Andrew Coleman is teaching an honours course in international economics at Victoria University of Wellington, and taught part time at Otago University over the summer semester.

Dave Maré and Steve Stillman, as adjunct professors of Economics at Waikato, together with Jacques Poot of Waikato, are supervising a University of Waikato PhD student, Rob Hodgson, who is examining immigrant selection issues. Steve is also providing informal supervision to Fiona Gunasekara, who is doing a PhD on the relationship between income and health status at the University of Otago, Wellington Medical School.

## **7. Research dissemination**

Motu retains intellectual property of all of its work so that we can make it freely available to the public. All publications, and data where available, are able to be freely downloaded from our website.

Motu also produces working papers based on emerging themes and data from the research projects we are contracted to do. These latest Motu Working papers are downloadable from [www.motu.org.nz/publications/working-papers](http://www.motu.org.nz/publications/working-papers). We also work to make data more accessible to researchers. See our website or get in touch for info on currently available information related to datasets.

Motu produces a newsletter "Motu Research Update" in June and November each year. Our latest Motu Research Update is available at [www.motu.org.nz/publications/newsletters](http://www.motu.org.nz/publications/newsletters).

Motu's website homepage includes a signup form so you can opt to receive notifications about Motu publications, seminars, and research developments.

Find out more on Motu's website [www.motu.org.nz](http://www.motu.org.nz).

*Please feel free to contact Motu Senior Fellows about their work.*

*Email contacts are [firstname.lastname@motu.org.nz](mailto:firstname.lastname@motu.org.nz). Alternatively you can call +64-4-939 4250 or email [info@motu.org.nz](mailto:info@motu.org.nz).*