



Research in Progress: July 2011

Current research, building capability, and dissemination activities

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I. Environmental Regulation

1.1. Climate Change

Suzi Kerr is leading the “Integrated Economics of Climate Change” project, funded through a major MSI (formerly FRST) grant and carried out by the EcoClimate collaboration (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 Cooperation for Effective Climate Policy Design and Implementation”, funded by MAF to provide empirical evidence and a clear conceptual framework to encourage cooperation, to enable 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. With a Motu intern Andrew is exploring 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 the Coordination and Cooperation 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, has now met three times, including a highly successful two-day retreat at Karekare (near Auckland). As a complement to this group we will be enhancing our emissions trading games as a tool to facilitate laypeople’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 its fourth year. 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, an assessment of the current state of knowledge on the costs of on-farm nitrogen mitigation options (which began with a workshop in early May), 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 will soon complete work, jointly with NIWA, to produce national maps of nutrient loads, historically, currently, and in two future scenarios with varying degrees of mitigation. Together with Landcare Research, Cawthron and Aqualinc we are also developing a series of simulation games related to water and water quality trading in order to assess the potential acceptability of trading systems to farmers. This research is funded by a CDRP project led by MAF.

1.3. Publications since March 2011

- Karpas, Eric, and Suzi Kerr. "Preliminary Evidence on Responses to the New Zealand Forestry Emissions Trading Scheme," *Motu Working Paper 11-09*, Motu Economic and Public Policy Research, Wellington.
- Coleman, Andrew. 2011. "Financial Contracts and the Management of Carbon Emissions in Small Scale Plantation Forests," *Motu Working Paper 11-04*, Motu Economic and Public Policy Research, Wellington.
- Grimes, Arthur. 2011. "Making Multiple Places into a Place – Infrastructure, Governance and Planning in Auckland", in *Investing in Better Places: International Perspectives*, S. Chisholm, Ed. St Andrews: The Smith Institute, pp. 69–78.
- van Benthem, Arthur A., and Suzi Kerr. 2011. "Bigger is Better: Avoided Deforestation Offsets in the Face of Adverse Selection," *PESD Working Paper #102*, Program on Energy and Sustainable Development, Stanford University, Stanford CA.

2. Home Ownership and Housing

A three-year Marsden grant for the programme on home ownership, headed by Arthur Grimes and Steve Stillman, concluded in March 2011. Completed studies in this programme cover determinants of homeownership (including tax and price considerations), impacts of homeownership on population mobility following an economic shock, impacts of state house sales on community outcomes, and the impact of homeownership on social capital acquisition. Work currently being completed within the programme includes analyses of the reliability of census data on homeownership and of state housing tenure, the impacts of homeownership on school voting participation and on broader electoral participation, and impacts of homeownership on personal wellbeing (using Australian data) and on health outcomes (using Chinese data).

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, which is funded by MED, involves Motu, the University of Otago Wellington School of Medicine, Covec, and Victoria University of Wellington. All aspects of this study are expected to be completed later in 2011.

2.1. Publications since March 2011

- Bergstrom, Katy, Arthur Grimes and Steven Stillman. 2011. "Does Selling State Silver Generate Private Gold? Determinants and Impacts of State House Sales and Acquisitions in

New Zealand," *Motu Working Paper 11-03*, Motu Economic and Public Policy Research, Wellington.

3. Economic Geography

3.1. Infrastructure

Arthur is leading the programme on impacts of infrastructure, initially funded by a four-year FRST grant that finished in September 2010. Over 2010/11, new studies were published on a range of topics, including: impacts of port infrastructure on exporting firms, importance of infrastructure and governance in Auckland, strategic issues in transport investment, impacts of passenger rail investments in Auckland, and the role of social capital in community outcomes.

The end of the FRST-funded programme was marked by a conference on the subject of infrastructure, jointly hosted with Victoria University of Wellington's Institute of Policy Studies. A range of papers, including contributions from Arthur Grimes and Andrew Coleman, was delivered to this conference and published in the IPS's *Policy Quarterly*, vol. 6(3). Andrew's contribution was also published as Motu Note #4.

The programme is continuing with conceptual work on the role of real options considerations for major transport projects. Arthur Grimes is presenting an invited paper to the European Regional Science Association Congress on this topic.

3.2. Cities and Agglomeration

Dave Maré and Andrew have completed a study of the determinants of firm and population location in Auckland. This work was undertaken for the Auckland Policy Office. The studies summarise patterns of residential location for various population subgroups, and patterns of firm location for various industry groups. They investigate 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. The study of firm location also analyses productivity effects of local area characteristics. The studies use data from the Census of Population and Dwellings, QVNZ, Statistics New Zealand's prototype Longitudinal Business Database, and various GIS data sources. They build on work that Dave has been doing over recent years on agglomeration and productivity. In related work, Dave has worked 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.

Andrew and Dave are also developing a theoretical model to analyse how the demand to use natural amenities such as beaches, and constructed amenities such as swimming pools, affect prices and location patterns in cities. The model aims to better understand the policy implications of several features of modern cities that cannot be satisfactorily explained by existing models, such as the extraordinary amount of within-city travel that takes place. The model is designed to reflect aspects of Auckland's price and residential location patterns that were uncovered in Andrew and Dave's empirical work.

3.3. Publications since March 2011

- Maré, David C., and Richard Fabling. "Productivity and Local Workforce Composition," *Motu Working Paper 11-01*, Motu Economic and Public Policy Research, Wellington.
- Maré, David C., and Andrew Coleman. 2011. "Patterns of Business Location in Auckland," *Motu Working Paper 11-08*, Motu Economic and Public Policy Research, Wellington.

- Maré, David C., and Andrew Coleman. 2011. "Estimating the Determinants of Population Location in Auckland," *Motu Working Paper 11-07*, Motu Economic and Public Policy Research, Wellington.
- Maré, David C., Andrew Coleman and Ruth Pinkerton. 2011. "Patterns of Population Location in Auckland," *Motu Working Paper 11-06*, Motu Economic and Public Policy Research, Wellington.
- Grimes, Arthur, Jason Le Vaillant and Philip McCann. 2011. "Auckland's Knowledge Economy: Australasian and European Comparisons," *MED Occasional Paper 11/02*, Ministry of Economic Development, Wellington.
- Roskrige, Matthew, Arthur Grimes, Philip McCann and Jacques Poot. Forthcoming. "Social Capital and Regional Social Infrastructure Investment: Evidence from New Zealand", *International Regional Science Review*.

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 paper 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 migrants' decisions to settle in New Zealand versus Australia, and the location decisions of both New Zealanders and Australians. Research has recently been 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. Unlike previous work, this study is examining the role of language skills in the adjustment process.

4.2. Firm Performance and Labour Dynamics

Dave is working with Dean Hyslop (Victoria University of Wellington, Motu Senior Research Associate) and Richard Fabling (RBNZ) to complete a study examining the link between firm productivity and the skill composition within firms. This work uses Statistics New Zealand's Linked Employer-Employee Database, and is part of the Department of Labour-led LEED Research Programme.

Dave and Richard Fabling have released working papers examining the impacts of local area workforce composition, including the presence of immigrants, on firm productivity and (with Steve) on innovation.

Dave is also working with Richard Fabling to look patterns of firm and worker flows in recent years. They are using the Statistics New Zealand prototype Longitudinal Business Database (LBD) to analyse firm-level changes in employment hiring and separations, and in firm start-ups and closures. This project is one of a series of country case studies being coordinated by the OECD to examine differences in labour market adjustment following the global financial crisis. Funding assistance has been received from the OECD and the New Zealand Department of Labour. Dave is working with the Department of Labour, contributing to their research programme on labour market performance, which includes issues such as labour force participation and labour productivity.

4.3. Consumption

Steve, Dave, Trinh Le, Dean Hyslop, John Gibson (University of Waikato, Motu Senior Research Associate), and Grant Scobie (Treasury) are concluding 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 shocks, such as job loss and the onset of health problems, affect 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, Arthur and Michelle Poland are examining the relationship between house price inflation, savings in other assets, and labour supply decision. Steve and Michelle are using SoFIE to examine changes in saving overtime.

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.

Dean Hyslop and Dave Maré are working with the Department of Corrections to refine the application of econometric evaluation methods to assessing the impacts of prisoner rehabilitation, education, and training programmes.

4.6. Publications since March 2011

- Maré, David C., and Richard Fabling. "Productivity and Local Workforce Composition," *Motu Working Paper 11-01*, Motu Economic and Public Policy Research, Wellington.
- Maré, David C., and Andrew Coleman. 2011. "Patterns of Business Location in Auckland," *Motu Working Paper 11-08*, Motu Economic and Public Policy Research, Wellington.

- Maré, David C., and Andrew Coleman. 2011. "Estimating the Determinants of Population Location in Auckland," *Motu Working Paper 11-07*, Motu Economic and Public Policy Research, Wellington.
- Maré, David C., Andrew Coleman and Ruth Pinkerton. 2011. "Patterns of Population Location in Auckland," *Motu Working Paper 11-06*, Motu Economic and Public Policy Research, Wellington.
- Maré, David C., Richard Fabling and Steven Stillman. 2011. "Immigration and Innovation," *Motu Working Paper 11-05*, Motu Economic and Public Policy Research, Wellington.
- Crichton, Sarah, Steven Stillman and Dean Hyslop. 2011. "Returning to Work from Injury: Longitudinal Evidence on Employment and Earnings," *Industrial and Labor Relations Review* 64(5) article 7. Available online at <http://digitalcommons.ilr.cornell.edu/ilrreview/vol64/iss4/7/>
- Baum, Christopher F., Mark E. Schaffer and Steven Stillman. 2011. "Using Stata for Applied Research: Reviewing its Capabilities," *Journal of Economic Surveys* 25:2, pp. 380–94.
- 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*.
- Stillman, Steven, Malathi Velamuri and Andrew Aitken. Forthcoming. "The Long-Run Impact of New Zealand's Structural Reform on Local Communities," *Journal of Comparative Economics*.
- Stillman, Steven, John Gibson and David McKenzie. Forthcoming. "The Impact of Immigration on Child Health: Experimental Evidence From a Migration Lottery Program." *Economic Inquiry*.

5. Macroeconomics, Monetary Economics and Economic Performance

Andrew Coleman, together with Özer 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. In June he published a series of Motu Notes designed to introduce key concepts in savings policy for New Zealand.

5.1. Publications since March 2011

- Coleman, Andrew. 2011. "PAYGO v SAYGO: Prefunding Government-Provided Pensions," *Motu Note #8*, Motu Economic and Public Policy Research, Wellington.
- Coleman, Andrew. 2011. "Behavioural Economics: Implications for the Savings Literature", *Motu Note #7*, Motu Economic and Public Policy Research, Wellington.
- Coleman, Andrew. 2011. "Mandatory Retirement Income Schemes, Saving Incentives, and KiwiSaver", *Motu Note #6*, Motu Economic and Public Policy Research, Wellington.
- Fabling, Richard, Arthur Grimes and Lynda Sanderson. Forthcoming. "Whatever Next? Export Market Choices of New Zealand Firms," *Papers in Regional Science*.
- Fabling, Richard, Arthur Grimes and Philip Stevens. Forthcoming. "The Relatives are Fine: Use of Qualitative Firm Data in Economic Analysis," *Applied Economics Letters*.

- 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*.

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 University of Auckland 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. Recently, Motu has presented Public Policy Seminars from Dr. Frank Alcock on the Deepwater Horizon oil spill, from former Motu Research Analyst (and future Motu Fellow) Isabelle Sin on the international dissemination of ideas, and from Ian MacKenzie on the successes and failures of Cap-and-Trade policies.

Internships assist young researchers to build a firm skills base, strengthening New Zealand’s research networks and empirical research capability. Presently, Motu is hosting two interns from overseas: Juliette Grangier, from ENSAE ParisTech, the leading French school of economics and statistics, and Madeline Duhon, from Stanford University. Juliette is working at the Department of Labour on data from the Longitudinal Immigration Survey: New Zealand. Madeline is working with Suzi Kerr and the environment team on nutrient trading in Lake Rotorua. Motu offers several internships each year, including an internship for a student of Māori descent.

Our scholarships support young academics to gain the skills necessary to become excellent researchers. Our Motu Thesis Scholarship recipient is Dan Bidois (Ngāti Maniapoto), who 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.

Teaching

Motu’s senior fellows build research capability through their work with universities. This includes research collaboration, teaching, and supervising thesis students.

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.

In the last semester, Steve Stillman taught an honours-level course in labour market economics. Steve has accepted a full-time professorship at the University of Otago from the second semester, but will remain an associate of Motu. He recently informally supervised Fiona Gunasekara, who

completed her PhD on the relationship between income and health status at the University of Otago, Wellington Medical School earlier in the year.

Andrew Coleman is teaching part of the principles course at the University of Otago University in the spring semester, as well as over the summer semester.

Dave Maré is an adjunct professor of Economics at Waikato and, with Jacques Poot of Waikato, is supervising a University of Waikato PhD student, Rob Hodgson, who is examining immigrant selection issues.

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. 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.

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.

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

Email contacts are firstname.lastname@motu.org.nz. Alternatively you can call +64-4-939 4250 or email info@motu.org.nz.