

Patterns of Population Location in Auckland

A recent Motu Working Paper by Dave Maré, Andrew Coleman and Ruth Pinkerton explores the decisions new entrants to Auckland make about where to live, and with whom.

Over 2010/11 Motu carried out research for the Auckland Policy Office seeking to establish the economic determinants of location choices made by individuals and businesses residing in Auckland. In 2011 three papers were published presenting this research. The first paper, “Patterns of Population Location in Auckland,” addressed the question “What determined where Aucklanders lived in 2006?” by asking the separate questions “Where did different groups of Aucklanders live?” and “What did they value there?”¹ As studies of most other modern, decentralised and sprawling cities have found, the answers are complex, but important for policymakers. Knowledge about why people choose to live where they live is vital for planning city development and making decisions about infrastructure investment.

The paper investigated the roles played by income, transport costs, proximity to amenities (such as banks, supermarkets, and schools), and neighbourhood clustering effects on where Auckland residents choose to live. Neighbourhood clustering occurs when residents have a preference around the socioeconomic or ethnic characteristics of their neighbours. Maré et al. used 2006 Census data and QVNZ figures to empirically establish the extent to which there are identifiable population subgroups that cluster together within the Auckland Urban Area, and further where those groups live, using techniques to incorporate the effects of income sorting and the influence of people’s desire to locate near amenities.

Johnston et al. (2009) identified considerable clustering among the four most common ethnic groups in Auckland, and showed that it increased significantly for Pacific Islanders and Asians over the period from 1991 to 2006.² Motu’s analysis of clustering represented an extension of knowledge around clustering in Auckland over several dimensions: through analysing clustering over areas with a small radius (1km) and through investigating clustering by income levels, qualifications, and country of birth.

Maré et al. found a clear tendency for different ethnic groups to cluster in different places – Pacific peoples and Māori in south and west Auckland, Asian peoples in the North Shore and Eastern suburbs. Pacific people were relatively highly concentrated as a group, while the majority New Zealand European group has relatively low exposure to other ethnic groups. There was also a tendency for returning New



Zealanders and people with degree qualifications to cluster together in central suburbs. However, while this kind of clustering by qualification and ethnicity suggests income-based sorting may have at least some importance in Auckland, it is notable that the evidence for clustering by income alone was not particularly strong. The high-income group was the most clustered and there was evidence that there are some areas with more than usual or less than usual numbers of high-income people, but even in these areas there was strong evidence of income-mixing.

With regards to the influence of convenient access to amenities, short distances to commercial centres (supermarkets or banks) and community services (schools) were shown to be valuable. For each type of facility, a 10 percent increase in the distance from the facility was associated with a 4–5% decrease in land price. There was also a sizeable premium paid to be close to downtown Auckland: land prices decline by 9 percent for every 10 percent increase in the distance from the CBD. The causes for this premium were not identified, but

¹ Maré, David C., Andrew Coleman and Ruth Pinkerton. 2011. “Patterns of Population Location in Auckland,” *Motu Working Paper 11-06*.

² Johnston, Ron J., Michael F. Poulsen and James Forrest. 2009. “Evaluating Changing Residential Segregation in Auckland, New Zealand, using Spatial Statistics,” *CMPO Working Paper Series 09/214*. Available online at <http://www.bris.ac.uk/cmppo/media/publications/09214.pdf>.

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Director's letter

As the dust settles from the recent election it is an opportune time to consider the characteristics of good policy. This requires assessing the long-term impacts as well as the short-term effects of policy, and considering the behaviours, capabilities and institutional arrangements that will determine the effectiveness of policies and the interactions between different policies.

Motu's research often provides insights into the intergenerational and long-term impacts of different decisions and policies.

Take wealth, for example.

New Zealand aspires to be a wealthy nation – wealthy in the broad sense of the word: economically, socially, environmentally and culturally.

Past Motu research has shown how taxation, housing, infrastructure and savings policies can affect the distribution of wealth, the levels of wealth, and the ability to acquire wealth and the forms in which wealth is held. For example, the absence of a capital gains tax and the taxation of nominal rates of interest rather than the real rates of interest tend to encourage investment in real estate relative to financial assets. This in turn can affect the depth and liquidity of financial and capital markets and the cost of capital that investors face.

Different institutional arrangements and policies can shift burdens of debt and taxation across generations. For example, as discussed in our last newsletter, a pay-

as-you-go superannuation scheme, such as New Zealand's, in countries with an ageing population is likely to require future tax rates over a period of decades that are significantly higher than in countries with save-as-you-go schemes. This in turn can have intergenerational consequences where an ageing population increases the tax burdens on younger people, which in turn affects their ability to purchase a home and their choices about where they live and where they work.

Two articles in this newsletter discuss recent Motu research that highlights some important long term considerations.

The cover article on population location in Auckland summarises research that investigates the decisions people make regarding where they choose to live in Auckland. The research considers factors that could influence such decisions, such as proximity to people with similar demographic characteristics and the available amenities. In doing so this research provides insights into the possible impacts of urban policy issues such as land-use zoning, policies designed to encourage mixed income neighbourhoods, the provision of public amenities and public transport infrastructure.

Achieving better water quality over time needs to consider not only the immediate impacts of run-off but also the much longer term impacts of nutrients that enter the deeper aquifers and can take many decades to be released into water systems.

The second article summarises research into the options available for policymakers to manage nutrient leaching in the Lake Rotorua catchment. This research considers how the levels of leaching might be changed by the adoption of best practice, or through changes in land use that is associated with different policy regulatory regimes. The research identifies the type of regulatory approach that could prove most effective over time.

Too often policy debates are framed in terms of simple interventions, with a short-term focus. But in reality the influence of such policies on behaviours can be more complex and much longer term in their impacts. Furthermore, if policies are designed in ways that do not lend themselves to good evaluation, then it becomes very difficult to judge their effectiveness.

The research Motu does is highly relevant to good public policy. Research in all of these areas helps build stronger knowledge to inform policy making. The research helps to build much deeper understandings and knowledge. It helps develop tools for decisionmaking that can consider wider and longer term impacts.

I would like to wish all readers a merry Christmas, a great and relaxing holiday break and all best wishes for 2012.



Howard Fancy

could include the quality of the commercial and social facilities, the natural amenities, job density or clustering effects.

Along with Motu's research on population location choices in Auckland, work was carried out analysing the location choices of people who have

moved to Auckland in the last five years and on what determines the location decisions of businesses. The combined impact of the analyses will provide valuable guidance for evaluating the likely impacts of urban policy issues such as land-use zoning, policies to encourage mixed-income neigh-

bourhoods, the public provision of locational amenities, and the provision of transport infrastructure.

Funding for this research was provided by the Ministry of Economic Development Auckland Policy Office. Full versions of the Motu working paper cited, and the two other papers in the series, are available from www.motu.org.nz/publications/working-papers.

Departures from Motu

The last few months have seen three of Motu's staff leave to pursue other opportunities. Steve Stillman, who had been a Senior Fellow at Motu since 2004, has taken up a position at the University of Otago. He will remain a Senior Associate, and continues to work with Yun Liang. Motu's Admin Manager, Bruce McKeivitt, and Wei Zhang, one of our Research Analysts, have also recently left. Wei left to pursue an opportunity at MAF, while Bruce is volunteering more time in his church and community while exploring his other options. December will also see the departure of Chris Young, who has been an RA at Motu for

New Arrivals

We're pleased to welcome three new arrivals. Richard Fabling, a new Senior Fellow, joins us from the Reserve Bank, where he was Senior Adviser in the research team. Richard has been an affiliate of Motu for many years and has worked with Senior Fellows Arthur, Dave and Steve.

Our new Business Manager is Glenda Shaw. Glenda is an experienced business manager who has worked for research centres and small and large private companies. She remains a part-time lecturer in business at WelTec.

Finally, we welcome Sean Hyland, a new Research Analyst. Sean will replace Chris, working with Arthur Grimes on economic geography and housing projects.

Senior Associate Honoured

John Gibson, a Motu Senior Research Associate, was recently awarded the Waikato University Management School Dean's Award for Research Excellence. Professor Frank Scrimgeour, Dean of the Management School, said

that John "stands out for his ability to ask novel questions, collect unique data and apply new analytical tools".

Changes to the Board

In August, Motu Research Trust board member Dean Stebbing sadly passed away. Dean had been on the board since 2009 and his work will be missed.

We have also seen a number of other changes to the Trust and Foundation boards. Colin James, our longstanding chair, who also sat on the Foundation board, has stepped down. Joining the Motu Research Board is Rob Fenwick, CNZM. Rob is co-founder and director of Living Earth. Current board member John Hay will replace Colin as chair, and we welcome him to that role. John also replaces Colin as a Trustee of the Motu Research and Education Foundation.

Interns

Over winter Motu enjoyed the company of two interns from Stanford University, Madeline Duhon and Mohit Thukral. Madeline and Mohit both worked with the environment team.

We welcome our new summer interns, Zack Dorner and Oliver Browne. Zack and Oliver will work with Suzi and the environment team.

AgDialogue Group Continues Progress

Motu's AgDialogue group, a discussion group made up of farmers, tangata whenua, and representatives from farm industry groups, NGOs, and the government, has continued to meet successfully, with three productive meetings and a weekend retreat over the past few months.

International Visitors

In November and early December Motu enjoyed visits from two United States-based economists, David Rapson of UC Davis and Marty Weitzman of Harvard University. Professor Weitzman's visit to New Zealand was coordinated by the University of Canterbury, and Motu worked with NZIER and the Treasury to run a series of workshops and public lectures in Wellington and Auckland.

Success of Former Intern

Former Motu intern Bobby Brooks was recently awarded the Sir Robert Mahuta Postgraduate Memorial Scholarship, which will allow him to attend Oxford University. He will undertake a PhD in synthetic organic chemistry. At the age of 17 Bobby was Waikato University's youngest ever graduate. He is now 21. Motu congratulates Bobby and wishes him the best in his upcoming studies.

Motu people

Board of Trustees Leith Comer, Philippa (Pip) Dunphy, Rob Fenwick, Neil Green, John Hay (chair), Tom Lambie, Richie Poulton.

Staff Simon Anastasiadis, Andrew Coleman, Richard Fabling, Howard Fancy, Arthur Grimes, Tui Head, Sean Hyland, Emma Jellicoe, Suzi Kerr, Yun Liang, Alex Olssen, Dave Maré, Hugh McDonald, Nicole Russell, Glenda Shaw, Levente Timar, Maxine Watene, Chris Young, Eina Wong.

Interns Zack Dorner, Oliver Browne.

Senior Research Associates John Gibson, Dean Hyslop, Steve Stillman.

Affiliates Deborah Cobb-Clark, Lew Evans, Viv Hall, Sholeh Maani, Tim Maloney, Philip McCann, John McDermott, Richard Newell, Les Oxley, Jacques Poot, James Sanchirico, Grant Scobie, Adolf Stroombergen, Malathi Velamuri.

International Advisors Denny Ellerman, Edward Glaeser, Stephen Jenkins, Wally Oates.

Designing Policy to Protect New Zealand's Water Quality

The effects of nutrient leaching on New Zealand's water quality are increasingly acknowledged as a serious and growing concern. A recent Motu Working Paper addresses the options available to policymakers for regulating nitrogen leaching in Lake Rotorua.

New Zealand's water quality is declining as high levels of nitrogen and phosphorus leach into our rivers and lakes. Over the last 50 years, intensification of land use in the Lake Rotorua catchment has resulted in increased discharges to the lake. Bay of Plenty Regional Council has set a goal to return nutrient loads to their 1960 levels. However, landowners' profit-seeking behaviour means that without regulation, loads are unlikely to decrease. In "Does Complex Hydrology Require Complex Water Quality Policy? NManager Simulations for Lake Rotorua", the Motu water quality team investigated a number of regulatory approaches to nitrogen management available to policymakers.

Developing tools to address nutrient leaching is made more complex by significant groundwater lags. When nitrogen leaches off farmland in the Rotorua catchment, 47% is carried by surface water (pasture runoff into streams and rivers) and enters the lake directly. The remaining 53% enters underground aquifers, which slowly release the nitrogen into the lake over a lag time which – depending on the location of the property – may be as long as 150 years. Thus, the total nitrogen exported from a given farm in a year is not the same as that farm's lake load for the year (the lake load being the nitrogen that reaches the lake in that year).

Motu used NManager, a research tool developed with input from NIWA and GNS, to model the land-use change and costs that result under a range of different regulatory approaches. The first is to require the implementation of best management practice. In this scenario land use does not change, but landowners reduce their leaching to the minimum possible leaching estimated for their current land use. Motu found that best practice regulation decreased lake loads by 242 tonnes per year. However, this is not sufficient to meet the regional council's environmental goals.

Motu then compared three other nutrient regulation schemes: land retirement and two types of trading schemes, export and vintage trading.

Land retirement assumes that land management practices remain the same, so there is no change in the leaching from dairy farms or from sheep/beef farms. In order to meet the target of nitrogen load reduction some land is retired into less nitrogen-intensive land

uses. So dairy farms may be retired into sheep-beef farms or forestry, and sheep/beef farms may be retired into forestry.

Under export trading, the regulator supplies annual emission allowances. At the end of each year landowners must surrender sufficient allowances to cover the nitrogen that leached from their property during that year. Landowners can trade allowances, meaning that landowners with insufficient allowances can either mitigate or purchase allowances from other landowners who will mitigate instead. This should encourage mitigation on land where it is relatively cheaper to mitigate. Regulators reduce nitrogen leaching by controlling the supply of allowances to landowners.

Motu also considered a vintage trading scheme. Vintage trading schemes incorporate groundwater lags by providing landowners with date-stamped nitrogen load allowances – allowances permitting landowners to release nitrogen into the lake – rather than export allowances. At the end of each year landowners surrender allowances to cover the lake loads that will result from the nitrogen that leached from their property over that year. The two-pulse vintage trading scenario Motu considered distinguishes between nitrogen that reaches the lake via surface water and nitrogen that arrives via groundwater. When landowners surrender nitrogen leaching allowances, 47% must be from the vintage that corresponds to the current year to cover surface leaching, and 53% must be from some future vintage, as specified by each farm's lag time, to cover groundwater leaching. For example: A landowner with a lag time of 15 years who exports 100kg of nitrogen in 2020 must surrender 47kg of 2020 allowances and 53kg of 2035 allowances at the end of 2020.

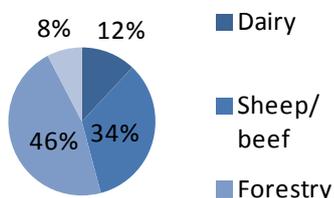
Land-Use Change

For a given environmental outcome, Motu investigated the effects of the different schemes on land-use change.

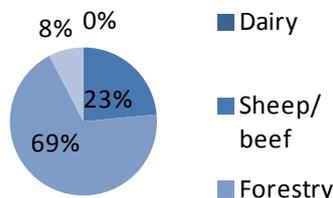
Unsurprisingly, the land retirement scheme sees significant change in land use, since it produces all of its mitigation from changes from nutrient-intensive land use to less nutrient-intensive land uses. In this scenario, all dairy land is retired to sheep/beef, and less productive sheep/beef land is retired into forestry.

Land Use Before and After Regulation

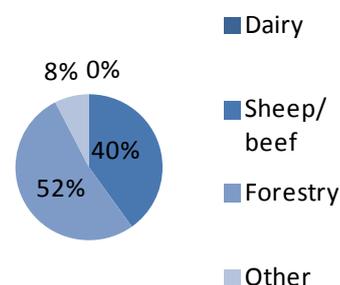
Before regulation



Land retirement



Export trading



The export trading schemes see a different pattern of land-use change, because they allow a mixture of best-practice land management reforms and land retirement. This means that, although all dairy land is still retired in the long term, by improving land management practices more land can be maintained, particularly in the short term, in the more nitrogen-intensive (and more profitable) uses. The incentives to improve management rather than retire to a less profitable use are large.

Comparing the Costs of the Schemes

For each of these schemes, NManager determined the stringency of regulation necessary to meet the regional council's environmental target. All these schemes have the same environmental outcomes (the same total nitrogen loss and same total nitrogen loads each year). Consequently, rather than modelling how much nutrient exports are reduced under each scheme, Motu compared the costs for the different schemes. Table 1 displays the costs of mitigation under these three schemes, as estimated by NManager.

NManager Estimates of Costs Associated with Schemes

Scheme	Land retirement	Export trading	Two-pulse vintage trading
Net Present Value (\$ millions)	84.8	68.2	67.7

The cost of mitigation differs between the land retirement and export trading schemes, despite producing identical levels of reductions in emissions, because the export trading scheme allows for mitigation to occur via management change as well as via land retirement. Landowners will therefore choose the least costly approach to reducing nitrogen leaching. While some land retirement is necessary under an export trading

scheme, some mitigation can be accomplished via less costly changes in management practices, and hence the export trading scheme is more cost effective.

Motu observed very little difference in cost between the export trading and two-pulse vintage trading schemes. As the two-pulse vintage scheme matches the cost of mitigation efforts to the present value of the environmental benefits, the two-pulse scheme was expected to be more cost effective than the export trading scheme. However, in this catchment the gain in cost effectiveness from the more complex regulatory scheme is not sufficient to justify the increased complexity and associated costs of implementing such a scheme.

Designing Policy around Research

Motu Working Paper 11-14 rounds out Motu's research on the economics and policy design of water quality management by adding empirical results to complement our existing body of policy work. Our results suggest that best practice land management will not be sufficient to meet the environmental target met by the Bay of Plenty Regional Council without changes in land use, while land retirement regulation would require significant and costly changes in land use. A mixture of these two approaches, as can be produced under a trading scheme, is likely to be preferable. However, there appear to be minimal gains from choosing a more complex trading scheme, and hence export trading regulation is likely to be desirable.

The paper discussed in this article is Simon Anastasiadis, Nauleau, Marie-Laure, Kerr, Suzi, Cox, Tim, and Rutherford, Kit. 2011. "Does Complex Hydrology Require Complex Water Quality Policy? NManager Simulations for Lake Rotorua," *Motu Working Paper 11-14*. It is available from www.motu.org.nz/publications/working-papers. More details about our nutrient trading and water quality research programme, including our recent publications, can be found at www.motu.org.nz/research/detail/nutrient_trading.

Motu Publications

For a complete list of publications, visit www.motu.org.nz/publications

Environmental Regulation

Karpas, Eric, and Suzi Kerr. 2011. "Preliminary Evidence on Responses to the New Zealand Forestry Emissions Trading Scheme," *Motu Working Paper 11-09*.

The goal of this paper is to provide information on forestry's role in the New Zealand ETS such that a foreign policymaker will be able to understand the intricacies and issues of the New Zealand system and be able to apply this knowledge to the design of his or her own ETS. This paper also aims to provide useful documentation of the system as it stands in 2010 for the New Zealand Parliament to use in future reviews of the system.

McDonald, Hugh, and Suzi Kerr. 2011. "Why do New Zealanders Care About Agricultural Emissions?" *Motu Note #9*.

The question of how to effectively address agricultural greenhouse gas emissions is of critical importance for New Zealand and the world. Ensuring that our responses are effective requires us to first consider what we aim to achieve: why do we care about agricultural emissions? This paper responds to this fundamental query, and argues that New Zealanders' diverse individual motivations can be grouped under three headings: one, concern about the direct impacts of climate change on New Zealand and the world; two, pressure from others based on their concern about climate change; and three, environmental or social goals that are complementary to reducing emissions. This framework is useful in setting out how our underlying motivations should shape our responses, and highlights the importance of choosing responses that will be robust to future uncertainties.

Tímár, Levente. 2011. "Rural Land Use and Land Tenure in New Zealand," *Motu Working Paper 11-13*.

Private land-use decisions are critical for a broad spectrum of environmental and social outcomes, ranging from water quality and climate change to rural income distribution. I use a large dataset of the land-use decisions of New Zealand landowners to estimate a cross-sectional multinomial logit model of land use.

Anastasiadis, Simon, Marie-Laure Nauleau, Suzi Kerr, Tim Cox, and Kit Rutherford. 2011. "Does Complex Hydrology Require Complex Water Quality Policy? NManager Simulations for Lake Rotorua," *Motu Working Paper 11-14*.

This paper examines six different approaches to nutrient management, and simulates the economic costs and environmental impacts associated with them using NManager, a partial equilibrium simulation model developed by Motu and NIWA, the National Institute for Water and Atmospheric Research. We focus on Lake Rotorua in the Bay of Plenty in New Zealand, where the regional council is concerned with the decline in the lake's water quality and has set a goal to restore the lake to its condition during the 1960s.

McDonald, Hugh, and Suzi Kerr. 2011. "Trading Efficiency in Water Quality Trading Markets: An Assessment of Trade-Offs," *Motu Working Paper 11-15*.

Despite the importance placed on avoiding transaction costs in water quality trading markets, there has been little discussion in the literature of practical policies to decrease these transaction costs, or any real assessment of when it is and is not optimal to decrease transaction costs. This paper begins to address these issues. We find that strong efforts to control time-of-trade transaction costs are most likely to be worthwhile in schemes with heterogeneous participants and large expected values and volumes of trading.

Economic Geography

Maré, David C., Andrew Coleman and Ruth Pinkerton. 2011. "Patterns of Population Location in Auckland," *Motu Working Paper 11-06*.

This paper uses spatial statistical techniques to examine the economic determinants of residential location patterns in Auckland in 2006. The primary empirical focus of this paper is descriptive. We seek to establish the extent to which there are identifiable population subgroups that cluster together within the Auckland Urban Area, and further, to ascertain where these groups mainly live. It confirms previous findings of strong ethnic clustering and identifies clustering by qualification, income, and country of birth. It examines the interaction between incomes, land prices, and popu-

lation density, and the relationship of land price with access to selected locational amenities.

Maré, David C., and Andrew Coleman. 2011. "Estimating the Determinants of Population Location in Auckland," *Motu Working Paper 11-07*.

This paper analyses the location choices of new entrants to Auckland between 1996 and 2006, to identify a systematic relationship between residential location choices and features of local areas such as population density, the population composition of the area or its neighbourhood, accessibility to different types of amenities, paying particular attention to the influence of land prices. The evidence demonstrates that this sorting reflects attraction to fellow group members, rather than being due to group members having common preferences for local amenities.

Maré, David C., and Andrew Coleman. 2011. "Patterns of Business Location in Auckland," *Motu Working Paper 11-08*.

We investigate the spatial determinants of industrial location and productivity variation within the Auckland Urban Area. We identify distinct location patterns across industries but, overall, the accessibility and employment composition measures that we examine do not account for industrial location and productivity patterns within Auckland. This increases the challenges of anticipating and planning for future business location patterns.

Grimes, Arthur. 2011. "Building Bridges: Treating a New Transport Link as a Real Option," *Motu Working Paper 11-12*.

A transportation investment that materially improves links between centres opens up previously unavailable options for new activities. Traditional cost-benefit analysis does not adequately take account of the value of this option; real options theory must be added to the analysis to evaluate the full benefits. This paper uses a specific example, Auckland's Harbour Bridge, to motivate the importance of real options analysis.

Housing

Grimes, Arthur, Steven Stillman and Chris Young. 2011. "Homeownership, Social Capital and Parental Voice in Schooling," *Motu Working Paper 11-11*.

We investigate the effects of homeownership on parents' involvement in local school elections. We use 2007 New Zealand school board of trustees data to examine whether schools where parents have high rates of homeownership experience high parental voting turnout in elections. We also investigate whether homeownership influences the probability that a school board proceeds to election, indicating parental willingness to serve as a school trustee. Similarly, we examine whether state-owned social housing rates affect these outcomes. Our findings show no discernible effect of homeownership on parental voting turnout in school elections after controls are added (contrary to the simple positive association), but a (robust) positive impact of both homeownership and state-ownership rates on the probability that a school holds an election.

Labour and Population Economics

Maré, David C., Richard Fabling and Steven Stillman. 2011. "Immigration and Innovation," *Motu Working Paper 11-05*.

We combine firm-level innovation data with area-level Census data to examine the relationship between local workforce characteristics, especially the presence of immigrants and local skills, and the likelihood of innovation by firms. We examine a range of innovation outcomes, and test the relationship for selected subgroups of firms. We find a positive relationship between local workforce characteristics and average innovation outcomes in labour market areas, but this is accounted for by variation in firm characteristics such as firm size, industry, and research and development expenditure. Controlling for these influences, we find no systematic evidence of an independent link between local workforce characteristics and innovation.

Maré, David C., and Richard Fabling. "Productivity and Local Workforce Composition," *Motu Working Paper 11-10*.

This chapter examines the link between firm productivity and the population composition of the areas in which firms operate. We find evidence of productive spillovers from operating in areas with high-skilled workers, and with high population density. A high-skilled local workforce benefits firms in high-skilled and high-research and development industries, and

small firms. The benefits of local population density are strongest for firms in dense areas, and for small and new firms. Firms providing local services are more productive in areas with high shares of migrants and new entrants, consistent with local demand factors.

Other Recent Publications

Crichton, Sarah, Steven Stillman and Dean Hyslop. July 2011. "Returning to Work from Injury: Longitudinal Evidence on Employment and Earnings," *Industrial and Labor Relations Review* 64:4, article 7.

Fabling, Richard, Arthur Grimes and Philip Stevens. 2012. "The Relatives are Fine: Use of Qualitative Firm Data in Economic Analysis," *Applied Economics Letters*, 19:7, pp. 614-8

Fabling, Richard. 2011. "International Engagement and Firm Performance," *Asymmetric Information: Newsletter of the New Zealand Association of Economists*, Issue 42, December 2011, p. 10.

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. Available online at http://www.med.govt.nz/templates/MultipageDocumentTOC___45870.aspx

Timar, Levente. 2011. "Modelling Rural Land Use Decisions in New Zealand," *Asymmetric Information: Newsletter of the New Zealand Association of Economists*, Issue 41, August 2011.

Public Policy Seminars

The Motu Public Policy Seminar series provides a forum for informed debate on important public policy issues. Through the series, we aim to make the latest economic research more accessible to inform policy debates in New Zealand. Our seminars are accessible to a wide audience, and are attended by people from diverse backgrounds who want to stay informed on economic, social and public policy research. The seminars are presented by the Motu Senior Fellows and Affiliates, as well as other top visiting academics from within New Zealand or around the world. These seminars are free to the public, and there is no need to register to attend.

In the last six months, we have hosted three Public Policy Seminars in both Auckland and Wellington: Dr. Frank Alcock presenting on "Deepwater Horizon: What Happened, Why and Where Do We Go from Here?", Lynda Sanderson with "International Engagement and Performance of New Zealand Firms," and Dr. David Rapson with "The Smart Grid and Residential Electricity Use – What We Know, What We Don't, and the Case for Collaborating with Academic Researchers". Another seminar, "The Crisis in the Eurozone: An Irish Perspective" was presented by Dr. Anthony Leddin in Auckland alone in October. Motu was also very pleased to join NZIER and the Treasury in hosting Professor Marty Weitzman in early December. Professor Weitzman presented public seminars in Auckland and Wellington.

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Environmental Regulation

Suzi Kerr is leading two projects relating to environmental markets. "The Integrated Economics of Climate Change" combines practical policy design with longer term integrated model development. "Markets and Water Quality" is a multi-disciplinary joint project aimed at developing a nutrient trading market for the Lake Rotorua catchment. Andrew Coleman is leading research to investigate non-mandatory approaches to climate change mitigation and adaptation in agriculture. He is currently investigating how the application of such schemes could accelerate the development and adoption of new technologies that respond to climate change.

Homeownership and Housing

A three-year Marsden grant for the homeownership programme, headed by Arthur Grimes and Steve Stillman, concluded in March 2011. Ongoing work includes analysing the reliability of census data on homeownership and state housing tenure and the impacts of homeownership on social wellbeing. Arthur is also concluding an evaluation of the New Zealand Insulation Fund.

Economic Geography

Arthur is continuing work on the infrastructure programme which, to date, has analysed the impacts of a number of large infrastructure projects including, among others: broadband, implementation of urban limits, and rail upgrades. Ongoing research involves conceptual work on the role of real options in major transport projects.

Labour and Population Economics

Dave Maré is working with Dean Hyslop is investigating the link between firm productivity and skill composition of firms' workforce in terms of skills and whether it includes migrants, and is documenting methods developed by him and Richard Fabling for estimating firm productivity. Dave also continues to work with Steve Stillman on the impacts of economic shocks. Richard Fabling is working with Dave on patterns of firm and worker flows in recent years, using the Statistics New Zealand prototype Longitudinal Business Database.

Macroeconomics and Finance

The focus of this part of Motu's programme continues to be on savings policy. Andrew Coleman is also working with Manu de Veirman (Reserve Bank) on an especially constructed Statistics New Zealand database to research the extent to which temporary discounts have permanent effects on the price level and the inflation rate in New Zealand.

Strengthening International Ties through Internships for Top Young Students

At Motu, we firmly believe that investing in training young researchers is key to building world-class economic research capability in New Zealand. We can also help to build better, evidence based policy through collaborating with young overseas researchers, in forging strong relationships for the future.

For the past two years, we have employed outstanding students from Stanford University and ENSAE ParisTech, two top international institutions. We are also currently establishing connections with other countries such as India.

In 2011, we had the pleasure of hosting Madeline Duhon and Mohit Thukral of Stanford University. They came to Motu as a part of the Stanford Energy and Environment Policy Analysis Center (SEEPAC) fellowship to New Zealand. This fellowship programme looked to increase international collaboration in environmental economics between young researchers from Stanford and researchers at Motu. Their papers will be released over the coming months.

Madeline Duhon is one of Stanford's top students, currently studying towards a Master of Science in Management Science and Engineering, having completed her Bachelor of Arts in Economics. Madeline worked with Justine Young of Environment Waikato and Motu Senior Fellow Suzi Kerr during her internship. Working with Suzi and Justine, Madeline analysed the Nitrogen Trading programme in Lake Taupo, as an example of innovative water management policy. The policy establishes a catchment-wide cap on nitrogen losses by allocating farmers individual nitrogen discharge allowances and allowing those farmers flexibility to trade allowances amongst themselves and to sell allowances to a public fund while remaining within the overall catchment cap. Madeline's paper provides much needed evidence on the effectiveness of this programme, for similar policies elsewhere going forward.

Mohit Thukral also came highly recommended to us from Stanford. He is currently completing his Bachelor of Arts in Economics, and is on an internship to the World Bank in Washington, D.C. He also worked with Suzi Kerr, looking



Juliette, Mohit and Madeline

at the upcoming emissions trading scheme in India, learning from the New Zealand experience. Mohit showed that with India's rapidly developing economy, they need to become leaders in utilising and developing policies to curb the associated rising emissions. The current planned emissions trading scheme in India will be implemented at a relatively downstream level, meaning each firm will be responsible for its own emissions. Mohit's paper looks at the feasibility of changing this to an upstream approach, collecting better quality information from higher in the supply chain.

We also hosted Juliette Grangier of ENSAE ParisTech, following the success of ENSAE student Marie-Laure Nauleau's visit in 2010. Marie recommended Motu to Juliette. ENSAE is Paris' top graduate school of economics, statistics and finance. Juliette came to Motu to do an internship as a part of her graduate degree. Juliette's interests lie in labour and immigration economics, so we placed her with friends of Motu at the Department of Labour. Here Juliette worked in the International Immigration, Settlement and Employment Dynamics (IMSED) research team, on a project looking at the skilled migrant category for immigrants wanting to come to New Zealand. The aim of this research was to assess how well the points that are allocated act as a predictor of labour market outcomes for successful applicants after being granted residence in New Zealand, and to assess its implications for public policy. This work looked to inform public policy in terms of reducing inefficiencies in the immigration process, using evidence from the Longitudinal Immigration Survey: New Zealand (LisNZ).

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