

## Does immigration raise house prices?

Migration in and out of New Zealand creates significant fluctuations in housing demand. At a national level, these fluctuations appear to be linked to house prices – periods of high net migration are also periods of high growth in house prices. Motu Senior Fellows Dave Maré and Steve Stillman have investigated this relationship through detailed analysis of population changes and housing costs in local areas.



Does immigration drive house price increases? Maré and Stillman used population data from the census, house sales price data from Quotable Value New Zealand and rent data from the Department of Building and Housing for the period 1986–2006 to examine different sources of population changes in local areas and their relationship to changes in house prices and rents.

Their analysis distinguishes between new immigrants to New Zealand; New Zealanders returning from living abroad; earlier migrants moving from other areas of New Zealand; and New Zealanders moving from other areas of New Zealand. By focusing on the relationship between changes in local population and changes in house prices, they are able to control for existing characteristics of local areas that either attract or repel individuals and lead to differential costs of housing.

The researchers found that areas with relatively high population growth also experienced relatively high increases in house prices. Specifically, a 1 percent increase in an area's population is associated with a

0.2 to 0.5 percent increase in local housing prices. This finding is robust even with controls for the possibility that individuals choose their house partly because they predict that its value will increase.

The picture is less clear when looking at the sources of population growth. Maré and Stillman found a strong positive relationship between the arrival of New Zealanders previously living abroad and increases in local house prices – a one percent increase in population caused by returning Kiwis is associated with a 6 to 9 percent increase in house prices. However, they found no evidence that the arrival of foreign-born immigrants to an area is positively related to local house prices. The latter group makes up a large component of population fluctuations, which makes this lack of correlation a significant finding.

Previous studies examining housing markets in the United States have found that foreign-born immigrant inflows lead to higher local house prices. It is difficult to know why the situation differs in New Zealand, although this finding is consistent with other recent work by Maré and Stillman which suggests immigration also has little impact on the labour market.

The overall results raise doubts that immigration causes an increase in housing prices. Instead, it looks likely that both immigration and housing respond to the same external macroeconomic factors. Identifying those is an entirely new project.

Funded by: Marsden Fund and Department of Labour. None of the views expressed here purport to represent those of the funders.

For more information see [www.motu.org.nz/migration](http://www.motu.org.nz/migration).

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# Director's letter

My recent experience working with the evolution of the New Zealand Emissions Trading System has emphasised the value of objective, high-quality research and especially research that is perceived as objective. Despite what is seen in the newspapers, much of the climate change policy discussion between the private and public sectors now involves high quality analysis and an understanding of both the contributions and limitations of the technical input available. Some key business participants have provided access to their confidential data to facilitate independent analysis of emissions leakage and its effects in a process that has integrity for both public and private sectors.

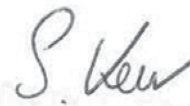
Two initiatives have been central to improved understanding and engagement: the Victoria University of Wellington Institute of Policy Studies workshops on post-2012 issues led by Jonathan Boston and the Climate Change Leadership Forum led by Stephen Tindall, in which Motu participates actively. While Motu cannot offer answers to any of the questions raised in design, we are able to clarify the issues and challenge those who do claim to have clear answers. Those deeply involved now understand more clearly that policy design is a compromise and that analysis can inform but cannot replace quality dialogue and judgement.

Climate change policy may be emblematic of the many issues we will face in future where the problems are complex and require genuine and ongoing cooperation between a wide range of parties rather than clear, simple legislative or regulatory solutions. Another example of this is water quality management. We have just completed a two-year project designing a prototype nutrient trading market for Lake Rotorua using a combination of analysis and dialogue with stakeholders. This has also motivated new empirical research to inform pivotal design decisions.

The complexity of these debates highlights the value of strong empirical evidence on key relationships and, in turn, the value of outstanding researchers. We are proud to be associated with Dean Hyslop who recently won the internationally prestigious Frisch Medal awarded by the Econometric Society. Motu works hard to facilitate research opportunities for top New Zealand economists and to develop young economists. Andrew Coleman (PhD Princeton and ex University of Michigan, Reserve Bank and Treasury) has added new theoretical strength to our senior fellow group. His work is currently focusing on the nexus between housing, taxation and saving. We are thrilled that Andrew Aitken, who has been with us since

2003, is moving on to do his PhD at University College London and thus joining a growing group of Motu alumni in top international PhD programmes. Kate Chambers and Simon Ngawhika had been working with us as research analysts before continuing on to graduate school in public policy and an analyst job at Te Puni Kōkiri respectively.

We continue to strengthen Motu's foundations through some key administrative appointments: Bruce McKeivitt as Office Manager (replacing Pauline Hornblow who is now helping set up a new polytechnic in Bahrain), Nicole Russell as Finance and Contracts Manager, and Rhyllie Alexander as our new Team Administrator (replacing Ashley Armstrong who has headed back to Boston). Our Foundation is also finding its legs with one major donation and new commitments from several patrons as well as its first commitment of funds to projects for the coming year. We can build on this new strength to support more high-quality, objective research and informed debate from our new Cuba Street premises.



Suzi Kerr, Director

## Motu people

**Board of Trustees** Colin James, Richie Poulton, Linda Tuhiwai Smith, Steve Thompson (Chair).

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**Staff** Andrew Aitken, Rhyllie Alexander, Kate Chambers, Andrew Coleman, John Gibson, Arthur Grimes, Marianna Kennedy, Suzi Kerr, Yun Liang, Kelly Lock, Dave Maré, Bruce McKeivitt, Cleo Ren, Nicole Russell, Steve Stillman, Maxine Watene, Wei Zhang.



Pauline imparts half a decade of Motu knowledge to Rhyllie before setting off for Bahrain.



Old Observatory, University College London

## Motu welcomes Andrew Coleman

Andrew Coleman has joined Motu as a Senior Fellow. Andrew spent a six-month secondment at Motu in 2004 – on leave from a teaching role at the University of Michigan – and we are delighted to welcome him as a permanent staff member. Most recently a Senior Advisor at the Reserve Bank of New Zealand, Andrew has recent research experience in issues of price determination and housing. At Motu, he will join research programmes on emissions trading and climate change, transport and housing. These programmes have much in common with Andrew's main research interest: the way that storage and transport networks affect the prices of natural resources.

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## Research Analysts and Summer Interns

Motu is currently recruiting research analysts and summer interns. Research analysts and interns support our senior fellows in all aspects of the research process. Many have gone on to study at top international universities or to high-level government research roles. More information and application procedures are on our website, [www.motu.org.nz](http://www.motu.org.nz).

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Congratulations are in order...

### Andrew Aitken off to UCL

Motu Research Analyst Andrew Aitken is heading to the prestigious University College London (UCL) to begin his PhD in Economics. Andrew came to Motu in 2003 from the University of Auckland. His most recent work has explored housing supply and irrigation infrastructure, working alongside Senior Fellow Arthur Grimes on both projects. Andrew says his time at Motu will be excellent preparation for future study, particularly the empirical skills he has gained. He intends to study Development Economics, Labour Economics and Economic Geography when he takes up his scholarship in September.

### Dean Hyslop awarded Frisch Medal

Labour market economist and Motu Affiliate Dean Hyslop has won the prestigious Frisch Medal of the Econometric Society for an article he co-authored with David Card, University of California, Berkeley. The medal is awarded every two years to an applied article (either empirical or theoretical) published in

*Econometrica* during the past five years. The winning article, published in the November 2005 issue of the journal, is titled "Estimating the Effects of a Time-Limited Earnings Subsidy for Welfare-Leavers". The judging panel for the award described the paper as "a model of careful, insightful empirical work".

### Colin James receives honorary doctorate

Colin James has been awarded an honorary doctorate of literature from Victoria University of Wellington at its May graduation ceremony. The award citation describes Colin as "New Zealand's foremost political journalist" and honours his "major contribution to the public's understanding of New Zealand politics and business, based on a profound knowledge of the country's political, social and economic history". His knowledge and expertise are greatly appreciated in his roles as a member of Motu's Board of Trustees and Chair of the Motu Research and Education Foundation. We would like to extend our congratulations to Colin for this much-deserved recognition.

# The value of Auckland's northern motorway extensions

It cost an estimated \$366 million<sup>1</sup> to extend Auckland's northern motorway from near Albany, to Silverdale and Orewa. Motu Senior Fellow Arthur Grimes and Research Analyst Yun Liang have used an innovative methodology to calculate the motorway's benefits.



The 'revealed preference' methodology recognises that people and firms reveal the benefits of a project when they move into an area to take advantage of the improved services and amenities. In doing so, they bid up land prices in the newly-serviced areas. In the northern motorway research, Grimes and Liang use changes in local land value (after controlling for other influences) as a revealed preference indicator of value.

Focusing on land values is at once simpler and more comprehensive than standard infrastructure benefit: cost analyses. Earlier studies of roading infrastructure in New Zealand have considered a range of factors in their calculations, including savings in vehicle operating and road maintenance costs, reductions in travel times, and environmental benefits.

However, the standard approach risks overlooking what people genuinely value from a roading project. This could be safer travel to a particular school, or better access for firms leading to employment opportunities. Observing changes in land value puts a direct price on all benefits of living in an area.

Because land prices have increased across Auckland, the researchers needed to determine which component of land price increases could be attributed solely to the motorway. Grimes and Liang found that economic benefits generally ceased for land further than seven kilometres from a motorway exit, except for settlements to the north of the motorway, where benefits were also

apparent. The average price change for unaffected areas was deducted from the change in affected localities, leaving only the relative change as a result of the motorway investment.

Motu is using the 'revealed preference' methodology to explore eight large-scale infrastructure investments in a four-year research programme funded by the Foundation for Research, Science and Technology. A consistent methodology will allow researchers to compare findings across projects in the research programme, including exploring the benefits of upgrades to Auckland's passenger rail network. The methodology is increasingly being used in the United States and United Kingdom.

So what is the value of the Auckland motorway extension? Major roading projects in New Zealand traditionally require a benefit:cost ratio greater than 4:1. Grimes and Liang's analysis suggests that this project's benefit:cost ratio is likely to be at least 6.3:1 and possibly much higher. This translates to at least \$2.3 billion in revealed benefit from an initial investment of \$366 million. The government's bean counters will no doubt be pleased.

<sup>1</sup>All dollar values in this article have been discounted to 2004 and are expressed in 2004 NZ\$.

Funded by: Foundation for Research, Science and Technology.  
For more information see [www.motu.org.nz/infrastructure](http://www.motu.org.nz/infrastructure).

# Sharing the costs of improving water quality

Allocating allowances is often the most contentious issue in an environmental trading system. Motu's prototype nutrient trading system for Lake Rotorua, designed by Motu Director Suzi Kerr and Research Analyst Kelly Lock, allocates allowances based on clearly defined cost-sharing principles.



Motu Director Suzi Kerr and Environment Bay of Plenty Chief Executive Bill Bayfield during the development of Motu's prototype nutrient trading system for the Lake Rotorua catchment

Equitable allocation of allowances starts from simple principles: those who damage water quality and those who benefit from improved water quality should bear costs. In the prototype system, landowners make contributions to reflect nitrogen and phosphorus entering the lake from their properties, and local and central government contributes both on behalf of all New Zealanders who benefit from improved water quality and to reflect wider responsibility for past pollution. The 'best' answer for Lake Rotorua will depend on what the community thinks is fair and what will be politically feasible.

Kerr and Lock propose a system where initial allowance levels are calculated as a proportion of current nutrient losses from each property. This approach avoids massive economic disruption while people are learning how the market works. However, after the first few years, the method used to allocate allowances would change to one based on potential nutrient loss. This switch will better reflect long-run lost opportunities: current levels of nutrient loss may not reflect typical long-term land-use for a particular parcel of land.

The total pool of allowances in the system should reflect our environmental goals which require significant reductions in nutrient loss. Landowners in aggregate should receive fewer allowances than their current nutrient loss but more than the goal. Regional and central government will need to buy excess allowances from landowners and remove them from the system to bring total nutrient loss to the desired environmental goal. Landowners can reduce their nutrient use to match the remaining allowances either through land-use change – for example from dairying to forestry – or through changes in land management.

Allocation principles in the prototype nutrient trading system are somewhat different to those that might apply in New Zealand's proposed Emissions Trading System (ETS). Allocation in the ETS may be partly designed to avoid 'leakage', the movement of production of trade-exposed products to unregulated countries. New Zealand will be at risk of leakage as long as the international agreement to reduce greenhouse gas emissions excludes our major international competitors. This is not a central issue for nutrient trading as water quality is primarily a localised issue.

Funded by: Environment Bay of Plenty, Ministry for Agriculture and Forestry and Ministry for the Environment. Throughout the design process, Motu met with a 'Nutrient Trading Study Group', a small group of experienced stakeholders and technical experts. The group was facilitated by Glen Lauder at CommonGround.

For more information see [www.motu.org.nz/rotorua\\_prototype](http://www.motu.org.nz/rotorua_prototype).

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## Motu is moving...but not far

The Motu offices on Cuba Street are moving two doors down to number 97, right beside the Bucket Fountain. Our phone and mail contacts will not change. We look forward to showing off our new space. It's rumoured to be even more colourful than the last.

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# Publications

For a complete list of publications, go to <http://www.motu.org.nz/publications>

## Motu working papers

- Grimes, Arthur and Yun Liang. 2008. "Bridge to Somewhere: The Value of Auckland's Northern Motorway Extensions," *Motu Working Paper* 08-07.
- Stillman, Steven and David C. Maré. 2008. "Housing Markets and Migration: Evidence from New Zealand," *Motu Working Paper* 08-06.
- Lock, Kelly and Suzi Kerr. 2008. "Nutrient Trading in Lake Rotorua: Choosing the Scope of a Nutrient Trading System," *Motu Working Paper* 08-05.
- Kerr, Suzi and Andrew Sweet. 2008. "Inclusion of Agriculture and Forestry in a Domestic Emissions Trading Scheme: New Zealand's Experience to Date," *Motu Working Paper* 08-04.
- Kerr, Suzi and Kit Rutherford. 2008. "Nutrient Trading in Lake Rotorua: Reporting and Modelling Net Nutrient Inputs," *Motu Working Paper* 08-03.
- Lock, Kelly and Suzi Kerr. 2008. "Nutrient Trading in Lake Rotorua: Overview of a Prototype System," *Motu Working Paper* 08-02.
- Stroombergen, Adolf. 2008. "ESSAM General Equilibrium Model: Estimation of 2005/06 Input-Output Tables," *Motu Working Paper* 08-01.

## Other publications

- Grimes, Arthur and Mark Holmes. Forthcoming. "Is There Long-Run Convergence among Regional House Prices in the UK?" *Urban Studies*, 45(10).
- Grimes, Arthur and Richard Fabling. 2007. "HR Practices and Firm Performance: What Matters and Who Does It?" *MED Occasional Paper* 07-02.
- Grimes, Arthur; John Singleton, Gary Hawke and Frank Holmes. Forthcoming. "Reforming a Small Central Bank: The Reserve Bank of New Zealand," *Chung-Hsing Journal of History* (in Mandarin), September.
- Kerr, Suzi. 2007. "Review of Proposed New Zealand Emissions Trading System." <http://www.mfe.govt.nz/publications/climate/review-proposed-nz-ets-nov07/index.html>.
- Le, Trinh; John Gibson and Steven Stillman. 2007. "What Explains the Wealth Gap between Immigrants and the New Zealand Born?" *New Zealand Economic Papers*, 41:2, pp. 131–62.
- Maré, David C. and Dean Hyslop. 2007. "Earnings Heterogeneity and Job Matching: Evidence from Linked Employer-Employee Data," *New Zealand Journal of Employment Relations*, 32:1, pp. 1–18.
- Maré, David C., Melanie Morten, and Steven Stillman. 2007. "Settlement Patterns and the Geographic Mobility of Recent Migrants to New Zealand," *New Zealand Economic Papers*, 41:2, pp. 163–96.
- McKenzie, David; John Gibson and Steven Stillman. 2007. "Moving to Opportunity, Leaving Behind What? Evaluating the Initial Effects of a Migration Policy on Incomes and Poverty in Source Areas," *New Zealand Economic Papers*, 41:2, pp. 197–224.
- Pfaff, Alexander; Suzi Kerr, Romina Cavatassi, Benjamin Davis, Leslie Lipper, Arturo Sanchez and Jason Timmins. "Effects of Poverty on Deforestation: Distinguishing Behavior from Location," in *Economics of Poverty, Environment and Natural Resource Use*, Rob B. Dellink and Arjan Ruijs, Eds. Dordrecht: Springer, pp. 101–16.

# Public policy seminars

Motu seminars are free and open to all who are interested. No registration is required; you can simply turn up on the day. If you would like to be included on the mailing list for these seminars, please call Marianna Kennedy on 04 939 4250 or email [Marianna.Kennedy@motu.org.nz](mailto:Marianna.Kennedy@motu.org.nz)

## Next seminar

June

**“Does Employment Growth Lower Wages?”**

**Presenter:** Dean Hyslop, Department of Labour and Statistics New Zealand

**Date:** Friday June 27 **Time:** 12:30-2:00 pm

**Venue:** Ground Floor Theatre, BP House, 20 Customhouse Quay, Wellington

## Recent seminars

May

**“Taxes and Economic Growth: What is All the Fuss About?”**

**Presenter:** Norman Gemmill, University of Nottingham and New Zealand Treasury

April

**“Did New Labour ‘Save’ the English National Health Service: A Ten-year Retrospective, 1997-2007”**

**Presenter:** Nicholas Mays, Ministry of Health and London School of Hygiene & Tropical Medicine, University of London.

January

**“Monetary Incentives for Students and Teachers in Schools: Experimental Evidence and Policy Implications”**

**Presenter:** Victor Lavy, Hebrew University of Jerusalem

December

**“Innovative Governance and Smart Regulation: Institutional and Regulatory Regimes for a Water-constrained World”**

**Presenter:** Neil Gunningham, Australian National University

**“Returns to Capital in Microenterprises: A Pathway Out of Poverty?”**

**Presenter:** David McKenzie, Development Research Group, World Bank.

# Upcoming conferences

Pathways, Circuits and Crossroads: New Research on Population, Migration and Community Dynamics, Wellington, June 9–11.  
<http://newsettlers.massey.ac.nz/>

ESAM08 Markets and Models: Policy Frontiers in the AWH Phillips Tradition, Wellington, July 9–11. <http://www.phillips08.org.nz/>

New Zealand Agricultural and Resource Economics Conference 2008, Nelson, August 28–29. <http://www.nzares.org.nz/>

Strategic Pricing and Revenue Margin Management, Auckland, August 28–29

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## Job growth and NZ's changing mix of workers

The eight years from 1999 were positive times for New Zealand's workforce. This period saw the total number employed increase by more than 20 percent and average real earnings rise by 9 percent. Motu Senior Fellow Dave Maré and Affiliate Dean Hyslop looked behind these figures and discovered some interesting interactions.



While both employment and wages track upwards, Maré and Hyslop found that employment growth among lower-paid workers was stronger during this economic upswing than among higher-paid workers, and that this differential growth led to a significant change in the skill-composition of the workforce. The composition change means that measured growth in average earnings – while positive at 9 percent – is lower than the 15 percent growth estimated if the existing workforce and firm composition had not changed.

Supporting their view that composition changes are an important part of the picture, Maré and Hyslop found that wage increases for continuing workers

are notably higher than average. In this period, around half of the workforce increase is due to lower unemployment and higher labour force participation drawing new workers into employment, while the other half is explained by population growth. The former two groups tend to be less skilled than average, and receive lower wages. Continuing workers' higher earnings growth partly reflects their increased labour market experience relative to incoming workers, and partly reflects an offsetting effect of the increase in lower-earning workers.

The entry of relatively low-paying firms also lowered average earnings growth, although this effect was considerably smaller than that resulting from the changing composition of workers. Firm composition changes lowered earnings growth by only 1 percent over the period, compared with a reduction of around 5 percent from changed worker composition.

This research uses the Linked Employer-Employee Database (LEED) at Statistics New Zealand. LEED contains longitudinal data from workers and firms in all sectors of the economy, making it a powerful tool for research of this nature.

The authors believe that these findings may have implications for the measurement of productivity growth. Similar composition changes – more low productivity workers and firms – may also help to explain New Zealand's relatively poor recent productivity performance.

Funded by: Statistics New Zealand, Department of Labour and New Zealand Treasury.

For more information see <http://www.stats.govt.nz/leed/reports> or [www.motu.org.nz/labour\\_dynamics](http://www.motu.org.nz/labour_dynamics).