



Stay in touch... [Facebook](#) [Twitter](#) [YouTube](#)

## Welcome from Professor Norman Gemmell

Welcome to the Winter 2018 edition of the public finance newsletter highlighting activities, research and news from the Chair in Public Finance since our last newsletter in the Autumn.

A particularly welcome piece of 'people news' is the recent appointment of a Chief Economist at the Ministry of Education (one of the sponsors of the CPF). Andrew Webber arrived from New South Wales in June and brings an enthusiasm for, and expertise in, education research that will hopefully help develop a rigorous approach to assessing public education outcomes in New Zealand. Andrew will be leading a fascinating research programme interrogating the Ministry's wide-ranging microdata. You will find a brief bio for Andrew below.

Among recent events you might be interested in, the CPF held another [public economics research day](#) in April, and the [New Zealand Association of Economists annual conference](#) in late June offered a number of public finance related presentations and papers. One of the more innovative (and controversial) contributions to the NZAE conference was the paper by Robert McCulloch and Sir Roger Douglas, arguing for very different forms of public health and welfare provision that is more based on mandated savings than taxes. Links to these events and various contributions are in the Events section.

A forthcoming event currently at planning stage is another CPF public economics research day in December. We hope to bring together scholars from the UK, Australia and New Zealand under a theme of modelling taxpayer compliance and tax policy. This event is being jointly sponsored and organised with the Tax Administration Research Centre at the University of Exeter, UK. Keep an eye out for further information later in the year and please let [Anna](#) know if you would like to attend.

The last few months have also seen a new batch of Working Papers in Public Finance released, including:

- several papers documenting further developments from the tax-transfer microsimulation project sponsored by the Ministry of Business Innovation and Employment;
- a paper from Statistics New Zealand on environmental taxation; and
- new analysis by Cabral and Gemmell, recently released by IRD, on the extent of income under-reporting by the self-employed in New Zealand: 20 percent seems to be the best estimate of average under-reporting across the sector.

Finally, the Tax Working Group continues to do its work (we presume). Though public pronouncements are few, advice documents from Inland Revenue and Treasury officials are periodically added to the TWG website [here](#). Releases in May and July included various papers on New Zealand's business (corporate income) tax including industry estimates of effective tax rates; a summary of the GST system; inequality, tax and fairness; and the taxation of wealth and housing. But the release most likely to attract media interest perhaps (if they ever notice it!), is a previously 'tax secret' 2016 Inland Revenue report on "High Wealth Individuals – Wealth Accumulation Review". Despite numerous redactions, there is a wealth (pun intended!) of information here. [HWI Report](#).

#### **Professor Norman Gemmell**

Chair in Public Finance  
Victoria Business School

---

## **Australian Tax policy Blog Article (Long-Term Changes in Income Inequality in New Zealand)**

A short summary of recent [research](#) on "Income Inequality in New Zealand" appeared on the [Austaxpolicy](#) (the Australian tax and transfer policy) blog on 14th June 2018.

Trends in income inequality are increasingly being discussed by economists and policy makers. But little is known about the levels and changes of such indices over long-periods. The main concluding remarks of this article (with some caveats) are as follows:

There is some consistency in the evidence across Australia and New Zealand of declines in taxable income inequality in the decades following World War II, followed by an increase from the 1980s to the mid-1990s or early 2000s. Thereafter at least in New Zealand, inequality appears relatively flat.

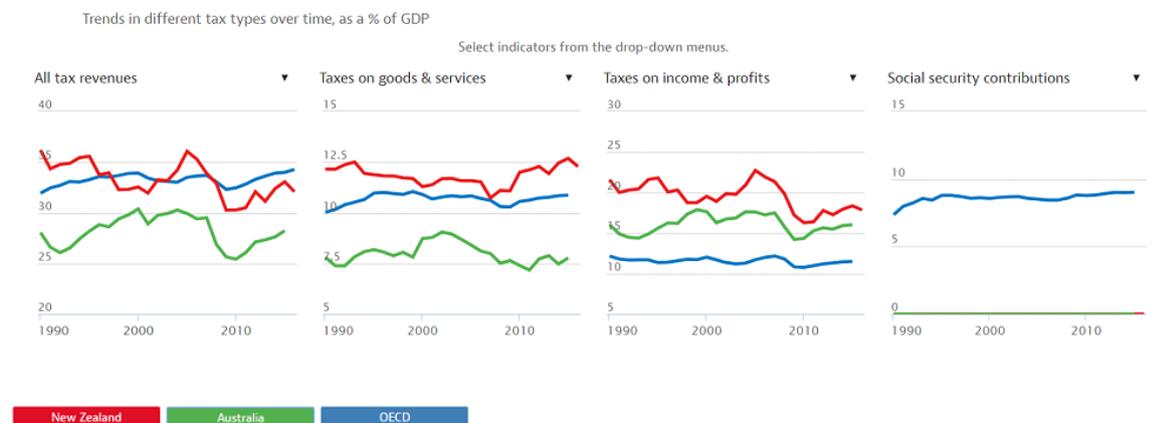
On gender aspects, the rise in inequality from the middle 1980s observed overall is especially prominent for females. This likely reflects, at least in part, the increasing participation of females in the labour force, likely to be characterised by lower hour levels and/or lower wage rates than male equivalents.

Finally, when examining long-period movements in inequality, there is always a danger of attributing causality to changes purely because they precede the change. This article has offered only an empirical description of income inequality changes over a long period, derived from available data and with some important caveats.

# Global Revenue Statistics Database

This [database](#) brings together all of the revenue statistics data covering 80 countries. The database presents detailed and comparable data on the tax-to-GDP ratios, tax structures and tax revenues (in nominal currency and USD) across the 80 countries.

The following interactive charts compare various indicators for New Zealand, Australia and the OECD.



## People News

### Andrew Webber - Chief Economist for Ministry of Education

Andrew was appointed as a Chief Economist of the Ministry of Education in June this year. He has spent the last eight years working as an economist in the New South Wales Government in Australia, first in crime prevention and then in the NSW education system. Andrew aims to improve the evidence base for education by identifying causal impacts and determining what works best. His current research interests include the relationships between students' backgrounds and educational performance; the economic benefit of improved education; and how to best provide data to educators to ensure continuous improvement. Andrew has a Bachelor of Management Studies (Hons) majoring in Economics and Finance from the University of Waikato and a Master of Economics from the University of New South Wales.



# New Research

## Recent work on Tax Microsimulation:

The MBIE-funded project to develop new microsimulation models of income taxes and transfers continues its technical work on the details of the computer models. Some of this background, but essential, work by Matt Nolan, PhD student on the project, has now been made publicly available in working paper format. Two recent analyses are summarised below.

### **(i) Income Leisure Preference in NZ & NZ Wage Equations: 1988 – 2013 (Matt Nolan)**

In "Income-leisure preferences in New Zealand: 1988-2013" individual preferences over income and hours of work are estimated for four time periods between 1988 and 2013. Using a discrete choice specification leisure-income preferences were estimated for demographic groups depending on their sex, relationship status, and number of dependents. Increasing participation and part time employment over this period led to the estimated preferences changing for all groups, although the changes for single males were relatively muted. Although the age effect on the preference for work remained relatively constant for all groups, the peak preference for work shifted up to the late 40s for all groups except for single females.

In "New Zealand Wage Equations: 1988-2013" the relationship between individual characteristics (e.g. age) and gross wage rates are estimated using a Heckman selection model for four time periods between 1988 and 2013. The purpose of these estimates is to allow for the imputation of wages for individuals who are out of work. Relative to prior research imputed wages were higher for most family types, except for single males. The estimated wage equations also suggested that the age associated with the highest average wage rose from early 40s to late 40s over this period.

### **(ii) Microsimulation Analysis of Optimal Income Tax Reforms: An Application to NZ (John Creedy, Norman Gemmell, Nicolas Herault and Penny Mok)**

This paper examines the optimal direction of marginal income tax reform in the context of New Zealand, which recently reduced its top marginal income tax rate to one of the lowest in the OECD. A behavioural microsimulation model is used, in which social welfare functions are defined in terms of either money metric utility or net income. The model allows for labour supply responses to tax changes, in which a high degree of population heterogeneity is represented along with all the details of the highly complex income tax and transfer system. The implications of the results for specific combinations of tax rate or threshold changes, that are both revenue neutral and welfare improving, are explored in detail, recognising the role of distributional value judgements in determining an optimal reform. The potential impact of additional income responses is also examined, using the concept of the elasticity of taxable income. Results suggest, under a wide range of parameter values and assumptions, that raising the highest income tax rate and/or threshold, would be part of an optimal reform package.

### **Self-Employment Income Under-Reporting in New Zealand (Ana Cabral and Norman Gemmell)**

Inland Revenue recently released the first estimates for New Zealand of the extent to which the self-employed appear to under-report their income for tax purposes. IR have previously been reluctant to measure such 'tax gaps' due to the unreliability of most existing methods. However, by using a generally acceptable approach that focuses on the self-employed and uses detailed taxpayer-level data, this new paper offers the first estimates of the self-employment 'income gaps'.

The approach uses the relationship between expenditure and income for the employed (with lower opportunities to evade) to infer the true income of the self-employed, applied to a unique dataset, New Zealand's Integrated Data Infrastructure (IDI), that matches individual data from the Household Economic Survey with register incomes declared to the tax administration. This has several advantages including minimising income measurement error by the employed and self-employed. The paper estimates that the self-employed underreport on average around 20% of their income (with a 95% confidence interval around 10-30%), with the income-gap varying by gender and region. Results were also found to be highly robust to a range of sensitivity tests for mismeasurement.

Perhaps surprisingly, media reporting of the new research results was muted, largely avoiding the type of lazy headline ("Inland Revenue fails to collect taxes"?) that grabs attention but is ultimately misleading.

Links to these working papers can be found below.

---

## Research Publications

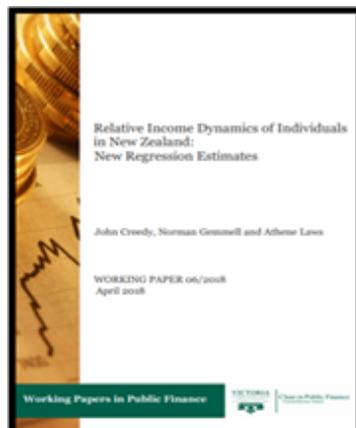
### Recent Working Papers

Links to recent research and working papers from the Chair in Public Finance.



A working paper by Nolan reports estimates for New Zealand wage and salary earners from 1998 to 2013.

[Download this paper](#)



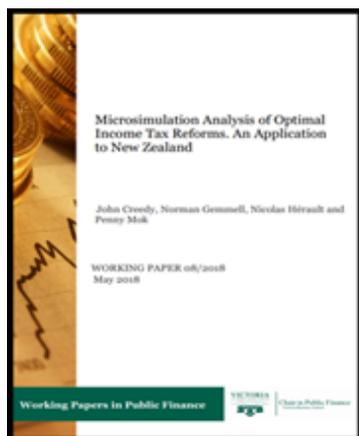
A working paper by Creedy, Gemmill and Laws Investigates relative income dynamics of individuals in New Zealand.

[Download this paper](#)



A working paper by Cabral and Gemmill estimates self-employment income gaps (defined as the proportion of undeclared to true income) in New Zealand.

[Download this paper](#)



A working paper by Creedy and others examines the optimal direction of marginal income tax reform in the New Zealand context.

[Download this paper](#)



A working paper by Nolan discusses the income-leisure preferences in NZ over 1988 to 2013.

[Download this paper](#)



A working paper by Harkness and Tipper discusses the relationship between environmental taxes and expenditure in New Zealand.

[Download this paper](#)

---

## Recent Published Papers

Creedy, J., and Gemmell, N. (2018). Income dynamics, pro-poor mobility and poverty persistence curves. *Economic Record*, <https://onlinelibrary.wiley.com/doi/epdf/10.1111/1475-4932.12426>

Gemmell, N., Nolan, P., and Scobie, G. (2018). Quality adjusting education sector productivity. *Policy Quarterly*, forthcoming.

Gemmell, N., and Ratto, M. (2018). The effects of penalty information on tax compliance: evidence from a New Zealand field experiment. *National Tax Journal*, 71, 3 (forthcoming, September).

Creedy, J., Gemmell, N., and Teng, J. (2018). Income effects and the elasticity of taxable income. *New Zealand Economic Papers*, 52(2), 185-203.

Alinaghi, N., and Reed, W.R. (2018). Meta-analysis and publication bias: How well does the FAT-PET-PEESE procedure work?. *Research Synthesis Methods*, 9(2), 285-311.

Gillitzer, C., and Skov, P. E. (2018). The use of third-party information reporting for tax deductions: evidence and implications from charitable deductions in Denmark. *Oxford Economic Papers*, 70(3), 892-916.

---

# Events

## Past Events

### New Zealand Association of Economists annual conference, 27-29 June 2018

As usual, this year's annual NZAE conference, held at AUT, included a number of papers that fall under a public finance theme. The NZAE programme can be found [here](#) and full papers for some of the papers reported below are [here](#). Here we report Abstracts for papers where authors provided those; otherwise we list the title and presenter.

A particularly provocative paper (available from the NZAE website) is by Sir Roger Douglas and Professor Robert MacCulloch of the University of Auckland. They argue that, with future demographic and other projected societal changes likely to generate greater demands for public welfare, superannuation and health care, policy towards their provision must change. They propose a new policy package based around subsidising individual savings accounts instead of current levels of tax-funding and argue that "the design of our reform seeks to overcome concerns that these kinds of changes may cause too many groups, especially low income earners, to lose out compared with the existing system".

#### **Regressivity in Public Natural Hazard Insurance: A Quantitative Analysis of the New Zealand Case**, Sally Owen and Ilan Noy

**Abstract:** Natural hazard insurance is almost always provided by the public sector (directly, or indirectly through public-private partnerships). Given this dominant role of the public sector in hazard insurance, and the importance of shocks in economic dynamics, it is surprising that equity issues have not faced more scrutiny with respect to the design of hazard insurance. The nature of the regressivity we quantify has not been previously identified. We provide a detailed quantification of the degree of regressivity of the New Zealand earthquake insurance program – a system that was designed with an egalitarian purpose. We measure this regressivity as it manifested in the half a million insurance claims that resulted from the Canterbury earthquakes of 2011. We suggest how this regressivity can be remedied with modifications to the programs' structure, and point to how other insurance schemes internationally are likely to also be regressive.

#### **Welfare: Savings not Taxation**, Roger Douglas and Robert MacCulloch

**Abstract:** Many nations are seeking to reform their welfare states so that costs to the government can be reduced and the quality of outcomes improved. As a potential way to achieve these aims, there has been a surge of interest in the ingaporean model which features compulsory savings accounts and transparent pricing of health services. It has achieved some of the best health-care outcomes in the world at a cost that is the lowest amongst high income countries. In this paper we show how tax cuts can be designed to help establish compulsory savings accounts so that a publicly funded welfare system can be changed into one that relies largely on private funding in a politically feasible way. To our knowledge, showing how both a tax and welfare reform can be jointly designed to enable this transition to occur has not been done before. Our policy reform creates institutions that have features in common with Singaporean ones, especially for health-care. However there are also key differences. We present a new unified approach to the funding of health, retirement and risk-cover (for events like unemployment) through the establishment of a set of compulsory savings accounts. A case study of New Zealand is used as an illustration. The fiscal impact of our proposed reform on the government's current and future budgets is reported, as well as its effect on low, middle and high income individuals.

**Evaluating the impact of 20 hours free early childhood education on women's labour market participation**, Lydia Cheung, Gail Pacheco and Isabelle Bouchard

**Abstract:** New Zealand introduced a substantial childcare subsidy just over a decade ago, providing 20 hours free early childhood education (ECE) to all three and four year olds. We evaluate the impact of this policy shift on mothers' labour market participation. Using a triple difference strategy and population wide administrative data, we follow mothers' monthly wages from pre-pregnancy to six years post-childbirth. The estimated impact of the ECE reform is a drop in earnings for eligible women, by four to ten percent post-childbirth. Furthermore, most of the reduction occurs prior to the children reaching the age of eligibility. This suggests that the policy may have partially displaced private spending on ECE and that eligible mothers substituted this saving intertemporally.

**Quality Adjusting Education Sector Productivity**, Norman Gemmell, Patrick Nolan and Grant Scobie

**Abstract:** This article examines how quality adjusted productivity indices for the education sector may be constructed and proposes a number of methods for making such adjustments to basic measures of labour and multifactor productivity growth. Results highlight the need for careful measurement, showing that measures unadjusted for quality are unlikely to provide sufficiently robust signals about changes in productivity performance in the education sector on which policy advice could be built. Our evidence suggests that quality adjustment to both inputs and outputs can make substantial differences to conclusions about productivity growth trends over 2000-15 compared with unadjusted indices.

**The efficiency effects of redistribution via minimum wages versus the tax-transfer system**, Nazila Alinaghi, John Creedy and Norman Gemmell

**Abstract:** A desire to alter the outcomes of the 'market-driven' wage distribution often underlie government redistributive policies. These can take the form of minimum wage legislation to raise the gross wage of low income workers, or the use of taxes and transfers to affect the distribution of net wages. The distributional effects of these two instruments can be expected to differ but also the efficiency consequences will be different. While the deadweight costs of taxation and welfare benefits are well understood, measuring the distortionary costs of minimum wages has been subjected to much less attention. As a result, the interesting question of how the efficiency costs compare for distributionally equivalent tax-transfer policies versus legislated minimum wage levels are largely unexplored. Focusing on *labour supply-side effects* (as opposed to more common labour demand effects), this paper uses a tax microsimulation model for New Zealand that includes legislated minimum wage levels to address this question. It reports simulations of inequality effects associated with various reform scenarios under each policy option.

**Measuring the diffusion of innovation among hospitals in New Zealand**, Patrick Nolan, Norman Gemmell and Huon Fraser

**Abstract:** In the measured sector two key drivers of productivity growth are the reallocation of capital and labour and technological diffusion (Conway, 2016). Yet reallocation tends to be weaker in the non-measured sector than in the measured sector. This reflects, among other things, a weaker "up or out dynamic" (firm entry and exit). One consequence of this is that technological diffusion (defined broadly) needs to play a greater role in driving productivity growth (Dunleavy, 2013). This paper examines an example of the diffusion of an innovation across publicly funded New Zealand hospitals. In particular, using unique microdata covering hospitals across New Zealand, it analyses the use of Avastin injections to treat wet age-related macular degeneration (a

chronic eye condition), a specific but common health condition in New Zealand. We also evaluate the impact of this diffusion on key outcomes (e.g. productivity, medical outcomes) and identify possible factors that help/hinder such diffusion. While focussed on one particular innovation, this work provides insight into factors that influence hospital performance. We argue that the approach also provides a useful template for the economic analysis of other health procedures which could, if applied more widely, help build a richer picture of the productivity performance of the New Zealand public health sector.

Other public finance papers presented at NZAE (some available for download):

**Measuring state sector productivity**, Patrick Nolan

**Recent evidence on New Zealand's productivity performance**, Patrick Nolan

**Quantifying the Effects of Fiscal policy in New Zealand: The Evidence from SVAR Models**, Anna Hamer-Adams and Martin Wong

**Reconceptualisation of income tax graduation as public equity**, Keith Rankin

### **Public Economics research day, 10 April 2018**

The Chair in Public Finance held a Public Economics research day on 10 April. Scholars from across New Zealand and Australia presented their recent work on topics such as tax compliance, elasticities of taxable income, optimal tax reforms, etc. You can find the programme and presentations [here](#).

Pictured below from the research day (left to right): Dr Nazila Alinaghi, Professor Robert Breunig, Dr Christian Gillitzer and Professor Norman Gemmell.



## Forthcoming Events

Keep an eye out for another research day likely to be in early December. This will bring scholars together from across United Kingdom, New Zealand, and Australia to share recent research on, among other things, modelling tax policy and tax compliance.

Please email Anna Burnett ([anna.burnett@vuw.ac.nz](mailto:anna.burnett@vuw.ac.nz)) if you would like to be added to our invite list.

---

## Media and Commentary

Recent featured commentary and media articles are as follows.



Documents that have been supplied by officials to help the TWG form its recommendations are being released [here](#).



The Treasury has released an independent review into a coding error that affected child-poverty projections. It provided to the Government in December 2017. You can read the review [here](#).



Recent research carried out by Victoria University and Inland Revenue underlines the importance of making tax process easier and simpler. Media release from Inland Revenue can be viewed [here](#). The full paper can be viewed [here](#).

---

## Journal of Tax Administration (JOTA) - New Special Issue: Call for Papers

Call for papers is now open for a new special issue of the JOTA on the topic of Tax Profession in the Spotlight. For full details click [here](#).

JOTA also have space in their next general issue of the journal and would particularly welcome papers from Psychology and Economics. For full details click [here](#).

### Chair in Public Finance

+64-4-463 9656

[www.victoria.ac.nz/cpf](http://www.victoria.ac.nz/cpf)

[cpf-info@vuw.ac.nz](mailto:cpf-info@vuw.ac.nz)

Level 7, Rutherford House, 23 Lambton Quay,  
Wellington.

### Victoria University of Wellington

+64-4-472 1000

[www.victoria.ac.nz](http://www.victoria.ac.nz)

Kelburn Parade, Wellington, New Zealand