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This issue of AI begins with the eighth in the series of interviews with eminent New Zealand economists: Peter Tait interviews Caroline Saunders. Regular contributions follow from Grant Scobie ('2B Red'), Stuart Birks ('Frames') and Paul Walker ('Blogwatch'). 'Fine Lines' is contributed by Leo Krippner, and the 'Five Minute Interview' is of Gail Pacheco. Gail and Arthur Grimes will soon be taking over from Mark Holmes as joint editors of NZEP. Corey Allan, from Motu, summarises research on greenhouse gas emissions from consumption in New Zealand. We have two contributions from Statistics New Zealand in this issue. First, Jeff Cope discusses the new standards for national accounts and balance of payments. Second, Francis Krsinich reports on research using 'big data' to measure prices changes in New Zealand. The 2014 GEN conference was held in Wellington early in November, and Joanne Leung, one of the organisers, provides a report. The economists at Canterbury provide this issue's report of Research in Progress.

INTERVIEW WITH PROFESSOR CAROLINE SAUNDERS

by Peter Tait

Caroline has over three decades of research experience, specialising on sustainable development, in the United Kingdom and New Zealand. This was undertaken for a wide range of private and public bodies including the EU Commission, DEFRA, FAO, OECD, MAF, MFAT, Treasury, MFE, MED, NZTE, Fonterra, MoT, Meat Industry and various other sector groups. Her current research includes evaluating trade and the environment including assessment of international markets policies and their impact on development. This includes developing and using the Lincoln Trade and Environment Model to assess impacts on trade of various factors including changing policy, market trends, energy use and greenhouse gas emissions and the development of new technologies.

She is currently Director of the Agribusiness and Economics Research Unit at Lincoln University, Professor of Trade and the Environment, Supporting Trade Portfolio Leader at LandCare Research and Strategy Director at the Ministry for Transport. She serves on the Advisory Committee on Economics Statistics NZ, Biosecurity Ministerial Advisory Committee, Advisory Board National Centre on Research on Europe and the Royal Society Council. She is a past president of the NZ Agricultural and Resource Economics Society and the NZ Association of Economists. She received the award of NZIER Economist of the Year in 2007 following her influential Food Miles report and, in recognition of her services to agricultural research, became an Officer of the NZ Order of Merit in 2009.

In this interview, we have a candid conversation about her life journey and experiences thus far.

Q: Tell me a bit about your life leading up to entering the economics profession?

A. Born in Blackpool, Lancashire, and brought up in St Annes I was mad nuts into horses so I did a lot of competition riding and stuff like that. My parents were medical - dad was an anaesthetist, and mum was a physiotherapist. Growing up when I did, the women became nurses and teachers - you go for a job that you can get after kids. Life's moved on a lot since then. But I was mad keen on horses so at 16 I left school and went down to riding stables near London to get qualified to teach and do horse stuff. This was quite a famous riding school called Fulmer and they had the Spanish Riding School Lipizzaner horses. It was mainly dressage but also jumping and that kind of stuff. For example, who's the guy that did Star Wars? George Lucas. I looked after his horses. Lots of Americans there. You work your socks off, and at one stage I was running the riding school part of the place, which was 40 horses, getting them ready, all that kind of stuff. It was full on - you work your butt off. I got qualified as a riding instructor.

What happened then was, they'd had a horse 'flu outbreak and the horses were kept in, and I got on this very big one that had been in the stables for three weeks and was feeling very fresh and it bucked me off and I damaged my back. Like a twit you don't do anything with it at the time. It sort of niggled away but, that was okay.

After a year at Forma I moved to Gloucester, which was really weird. It was like going back two centuries. This was to work for a sort of pseudo-aristocrat. Coming from the north with a bit of a left wing background, having people ducking caps and going, "Morning miss", and that kind of stuff, was a bit much. That, and with my back playing up, which meant I couldn't

lift consistently, competition was into the eventing side, very physical job, you've got to lift horse feed, the hay, you're lifting all the time, saddles all that stuff.

Q: How did you get introduced to economics?

A. So I decided to give it up and go back to Lancashire - worked at a pub while back healed a bit, and did some independent teaching of horse riding. Enjoyed working in a pub, lovely country pub, good mates. Got a boyfriend. He went down to Wales - we used to do a bit of climbing - he started going blind so I moved down to Wales to look after him. In the end he got an operation and got sight in one eye back, but I couldn't get a job in Wales because I couldn't speak Welsh. At that time they were doing 'direct action' to get the fourth language channel. The only job I could get was working at a local hotel as a sort of receptionist, which wasn't a bad job as it goes.

I'd always wanted to do A-levels so I went and enrolled in the local technical college to do A-levels, so I worked part-time in the pub in the evenings to pay and did my A-levels during the day. I had a bit of a social conscience so did sociology, was a bit passionate about politics so I took British Constitution, and somebody told me economics was easy so I thought I'd do that. In fact I didn't have a clue about economics; it could have been home economics as far as I was concerned.

So, went to the college and was very lucky. We had a really good, passionate economist teaching us and I really fired up on it, just thought, wow this is amazing stuff. It put a lot of jigsaw pieces in line -about how the world operated. The British constitution was fascinating - we were taught by a communist from right wing text books so that was a good mix. As part of the condition that you were on this one year, was that you had to fill in a University application form. Now, given my very sparse academic background, one, I thought there's no way I'm going to get in in a million years, so it's a bit of a joke filling the form in; and two, not many would accept me cause I didn't have much of an academic record, and the only two that would provisionally accept me, based on A-level results were Lancaster and University College of North Wales in Bangor. I thought, "What should I do at university?", and I thought, "Well I've worked a bit on farms with horses, and I like the economics -what about agricultural economics?" There was a feel at the time more, we'll do that, because we want to help feed the world and all that kind of stuff. Certainly, I didn't really take it that seriously, in the sense that I didn't think I'd ever get there, and get the results needed to get in. So, I went to University College of North Wales. It was an Honours Agricultural degree with agricultural economics, so had a bit more agriculture than the average ag-econ degree now. It was good. During that period I met my ex-husband, a New Zealander. Thatcher came to power in '79, and she was throwing New Zealanders, who lived in the UK for a long time, out with 48 hours' notice - immigration policy. So we had a bit of a shotgun wedding, so that he could stay in the UK. That was in the last year of my degree.

Q: Your PhD is from Newcastle, tell me about that time?

A. My results came out and I'd got a good result for the degree and I looked and Newcastle were advertising a PhD funded by the MAF, so I went up for an interview, got the PhD position and we moved up to Newcastle. It was a shock moving from Bangor, which was a very gentle environment, to Newcastle which was a very aggressive academic environment - big jump up, and also that jump from undergrad where you've got your nice boundaries, to the PhD which is of course the sea of research which you sort of flounder a bit. It was a very hard environment but it was a good training environment, you sank or swam, and there were a few that did sink.

I'd done my undergrad dissertation on the impact on NZ of the UK going into the EU and alternative crops for NZ, so I wanted to continue on that a bit in my PhD thesis and do the trade issues. I did the enlargement of the EU and impact on wheat, which is what the MAF really wanted. So, I introduced myself to partial-equilibrium trade modelling, built a trade model in Fortran 77. A little over a year into the PhD found out I was pregnant with Joe, took a little time out. It was a bit of a joke at Newcastle. They'd not really had much to do with women, and certainly not pregnant women. I think there was one woman there. There was a bit of the old Oxbridge there. It's a very different environment now. Went back and discovered just before I handed my thesis in, I was pregnant with Donna.

Q: After the PhD you went into academia?

A. Soon after I had Donna I went back to work, tutoring. Then one of the guys there had the courage, because they really didn't want to employ a woman, and they didn't want to employ a woman with children, to employ me on an hourly basis to help with some EU commissioned research. This was my first start on research projects. It was pretty insecure funding, so it was very much an hourly basis - wasn't allowed to take coffee breaks - stuff like that - you worked that full year with three days holiday. The guy was just terrified that if the kids cried I'd be running home, so away. I worked on contract basis for a couple of years, and then they actually found a one year lectureship for us, but I was pregnant with John and they dropped the offer. I had John and then another lectureship came up. I interviewed for it. They didn't offer it to me. That was in the ag-econ part of the department, my natural home, but there was another growing area in the department that was called Countryside Management, which was an integrated degree looking at management for public good purposes on land, both private and public. It includes some economics, but also includes soil sciences -it was interdisciplinary. A job came up on that and I took that job. I had to partly fund my salary out of external contracts. And really, that was the growth in the department - we just took off with that degree, loads of students, busy busy. Magic time really because you had thirty students a year in the cohort, you knew the students, you got them summer jobs, you probably knew too much about their personal lives, it was very much a family relationship, and you help them get jobs when they leave and stuff like that. But it was very very hard work, particularly for the rest of the department because we were bringing the students in.

Q: How did you come to New Zealand?

A. Martin Whitby, the person who'd actually had the courage to employ me in the first place, he'd been out to Lincoln for a year, and he said you should go out to Lincoln. I got invited out to give a talk at the Grasslands Conference, '93, first time I'd been. Thought it was great. Went back and I thought, "Well, let's see about coming out". So I applied for a job and came out for a year's leave of absence. I loved it. Coming out to Lincoln, the work environment was just stunning, just like a new world. People weren't shouting at each other. You walked into a staff meeting - they weren't throwing books at each other, having tantrums. I couldn't believe the world was like this. They were pleasant. And of course I loved the lifestyle,

the horses, and the kids. Totally different. We thought very, very hard about it. We came out permanently in '96. Got a ten acre lifestyle block, which is just the dream for me - ponies on it for the kids - the kids could be kids again. Got a job - Senior Lecturer in Economics. I did the big level-one course and international economics. I had to do the lectures from scratch. I taught public economics, environmental economics and I really enjoyed doing resource economics because that was bringing economics across to environmental students.

Q: What lead to you becoming Director of the AERU and the kind of projects undertaken in that role?

A. In 1998 I put a bid in to the FRST for trade modelling. It was really Ralph Lattimore who thought it would be a good idea. I put the bid in, to pick up a partial-equilibrium trade model and link it to the environment. I'd worked a lot on ag-environment schemes in the UK and the development and the interest in agricultural and environmental indicators and trade indicators, so you had indicators like the PSE which was measuring trade protection. Now they were talking about, 'how do we measure the environment? And indicators to look at the impact of trade on the environment. I thought we would link the economic side of the trade flows through to the physical farm systems, down to the environmental consequences, and there was born the Lincoln Trade and Environment Model. So that meant that eventually some of my teaching was bought out - Anita Wreford came in on that and did her PhD, we got Selim Cagatay - a number of people we brought in under that including Bill Kaye-Blake. So this is where the externally funded research program started. Before that, I suppose because of my background of having always to cover my salary through external research contracts, I'd been involved in one or two other projects. There was the first one involved with John Manhire on Organic farming. That's how I got introduced to the John Manhire team which was eventually formed into ARGOS. I started as Director of the AERU in 2001. We grew very quickly because we got other big contracts in. It was quite a good time for getting MB projects which was the big underpinning of the unit. The Food Miles report was huge for the unit, in the sense that it just got so much attention it put us right up the radar screen. But we spent two years backing up that report, for almost no money - it was a hell of a lot of work. People in the unit were wonderful pulling together trying to keep our heads above water, keep sane while that was going on. But it did give us a lot of profile.

I love going out talking to sectors and businesses, so consultative work we've done on economic development projects has been great, going out and talking to communities and finding what would help, what would make a difference. I like something that - you can see a run on the board. It's looking to see where there is a potential gap, or a potential threat - food miles was a classic one - you're looking – scanning - going that's a threat to us – right, nobody is doing anything about it – we'd better do something. It's a bit like the value added - the premium product. There's lots of people doing amazing work, trying to increase NZs wealth and income by developing new products, setting up businesses etc. but I didn't see anybody doing the big message of, don't sell a commodity product at a commodity price. So, trying to get that message across. Being on the Royal Society Council has been interesting, giving that oversight to the science community, pushing the broader vision of science. So when I went there it was very natural science focussed - I was the only non-natural scientist round the table - and it was making sure the social scientists got included, and now humanities.

Q: You now lead the Maximising Export Returns project looking at adding value in the primary sector. What changes have contributed to getting wider traction on the issue?

A. I think we are moving to a new generation, a different generation with a bit more commercial people, less focused on Europe - they understand that other markets are different. Then there's also, you get more commercial involvement in the companies, more commercial people on the board, more commercial people running the companies. This new generation know and understand opportunities. Then there's environmental limits - it's accepted that we can't get significantly more milk, we've suddenly sort of gone, oops, we can't carry on cranking the handle, we're going to have to get the value from somewhere else.

Q: What's the dream ticket from here?

A. Dream ticket in five years' time would be to be here, with more secure funding. It's the running around and insecurity that's the hard bit. You can't really take your foot off the pedal. You've got to keep projects coming in. That would be nice, but I don't think it will happen. Not being in Wellington, more and more I think is harder, because we're not there in people's faces, so they meet those people at an event, and so it's a bit harder to capture the business.

Q: Economics going forward, advice and suggestions?

A. The trouble is we're not very good at getting across what economics is about. We've been a bit complacent about teaching it because we had captured compulsory first years, so we focus on the techniques and the models, as opposed to what economics can do for you and the underlying pinning of economics. So when these business management courses come along, that are relatively easy, they tend to get more popular. So, if I was talking to a young person, to say, "Look, make sure you're realising what economics is about and don't get put off - as you're being given the tool box". I wonder how many have been put off. We've had that debate remember, all through the years, when you're doing economics degrees. People don't like the quantitative - it's difficult so there is pressure to take it off - yet we all know that the quantitative is really important, so I think that has happened to economics. We all know economics is important but it's hard - it's not as easy as other courses and so therefore it gets dropped - it's not as popular, we're not good at selling it, what you can do with it. I remember in Newcastle we had a lot of trouble getting students into agricultural degrees, because they did the same – they went straight and taught the techniques. What they did - they actually changed the first year to be much more, "This is the result of our work", so it was about amazing things they had done in Malawi or stuff like that. That captured the imagination so that when they started teaching the tools, they said, I can understand why we're having to learn about elasticities because.... Students get applied, and see what it's about, get involved. We also need a better model for teaching in that we're still on the old fashioned timetables. It would be nice if the unit could do a couple of courses in environmental and wellbeing economics that we could teach when we wanted, how we wanted - actually to be more convenient for the students - it could be online, it could be evening classes or block classes.

THE FIVE-MINUTE INTERVIEW WITH... GAIL PACHECO

1. **When did you decide that you wanted a career in economics?**

   I really enjoyed economics in high school – partly due to an enthusiastic and passionate teacher, with a keen interest and focus on the policy relevance of economic models. Despite that, I entered university thinking I should major in accounting, as I had read some statistics on the fact that many of the most successful women in the world were chartered accountants. I soon realised that I could not major in a subject I had no intrinsic interest in. Postgrad study in economics furthered my enthusiasm for an academic career, as I was fortunate to have a lot of research assistant work, which peaked my interest in a broad range of fields.

2. **Did any particular event or experience influence your decision to study economics?**

It was probably an accumulation of life events, rather than any particular one. I grew up in Kuwait, spent time at boarding school in the UK in the mid-80s, and experienced the Gulf War in 1990. The war itself forced our family to experience life as refugees, and we escaped via Iraq to India, where I spent more time at a boarding school. In my late teens we migrated to NZ. I therefore grew up experiencing first-hand the vast differences that exist between countries and wanting to know more about the mechanisms at play behind such diverse and divergent economies.

3. **Are there particular books which stimulated your early interest in economics?**

   My interest in the field of labour economics began during my Honours degree at Auckland, as I read the Card and Krueger book of "Myth and Measurement: The New Economics of the Minimum Wage". It was an interesting time in minimum wage research; as there was a surge in studies dispelling many of the traditional views regarding the impact of a rising minimum wage on the labour market outcomes of affected individuals. In addition to this, there was an equally substantial rise in the number of studies criticising Card and Krueger's work. It was interesting to watch this debate unfold and eventually become a part of it.

4. **Did any teachers, lecturers or supervisors play a significant role in your early education?**

   As I mentioned earlier, I had an inspirational teacher for my A-level economics (high school equivalent in the British system) – although I of course cannot remember her name. I must also pay homage to my PhD supervisor (Professor Tim Maloney) – I don't think I realised how much he had shaped my way of thinking about research, until I recently heard myself spouting similar words of wisdom / advice to my own doctoral students.

5. **Do you have any favourite economists whose works you always read?**

   As an applied economist working in a broad range of areas including education, health and labour, I tend to read widely – but unfortunately not as much as I would like to. In the labour realm, I try to keep up with the latest research in the minimum wage space, by Neumark, Wascher, Card, Manning, and any work emanating from the Low Pay Commission in the UK.

6. **Do you have a favourite among your own papers or books?**

   That is a tough choice to make. If I had to choose, I would probably pick a couple of my sole authored works. While I really enjoy working with colleagues on a variety of applied economics topics, there is always a sense of greater accomplishment from a sole authored piece. In particular, I would probably choose my work on revisiting the link between minimum wage and wage inequality in *Economics Letters*; and estimating the employment impacts of a binding minimum wage in *Economic Record*. The latter of these was fairly innovative at the time as no other research to my knowledge had tried to empirically construct probabilities of being a minimum wage worker, and then impose these probabilities on the distribution of workers to identify those for whom a rise in the minimum wage would be binding – instead most studies assume that certain groups will find the minimum wage binding; such as youth, or those with low levels of educational qualifications, etc.

7. **What do you regard as the most significant economic event in your lifetime?**

   Many of my peers would often refer to the global financial crises if asked this question, but I tend to think long term and view the accelerated rate of globalization over the last 20 years as having a significant impact on how many economies across the world operate.

8. **What do you like to do when you are not doing economics?**

   I enjoy relaxing with my immediate family, which consists of my husband, 7 year old son, and 4 year old daughter. I am also an avid spectator of many sporting codes, including being a loyal member and season ticket holder for the NZ Warriors rugby league team – to the extent that when they made the grand final in 2011; I immediately bought tickets to the game and hopped on a plane to Sydney with my then 4 year old boy!! Pity they lost – but I would do it again, in a heartbeat.

FROM THE 2B RED FILE

By Grant M. Scobie
(grant.scobie@treasury.govt.nz)

We return to the current theme of inequality to start this edition. What are the chances of writing a best selling economics tome of 699 pages that is founded on shaky theory and debatable data to reach impractical solutions to a problem that may not exist? Pretty slim you say? Well a French professor, worried about inequality, has managed just that. **Thomas Piketty (2014) *Capital in the Twenty-First century* (Cambridge, Mass: The Belknap Press of Harvard University Press).**

Doubtless he has become rather wealthy as a result of this best seller and the associated speaking engagements; as a consequence one would have to conclude that *cet. par.* global inequality will have increased. One can only hope the irony is not totally lost on the good professor.

And speaking of irony- the book is published by The Belknap Press, which derived its funding from a 1949 bequest from Waldron Phoenix Belknap Jnr. who had received a large inheritance from his wealthy banker father. Oh, the horrors of wealth!

Even were we to equalise wealth holdings today for every person on the planet, tomorrow there would be growing inequality. In short, inequality is the consequence of a host of underlying factors. Wealth holding is simply a symptom. Le professeur comes up rather short on addressing the real underlying causes; rather, he wants us to believe

that global capitalism is the true cause. You might be forgiven for thinking that is a bit of a stretch; the most casual reading of Greek, Egyptian or Roman history (let alone England in the early Industrial Age) would suggest that extreme inequality of scale we can't imagine today existed long before global capitalism, at least in its current form.

Take any modern survey of wealth holdings (HILDA in Australia, the British Panel Survey or our own SoFIE) and holding constant age, gender, income, education and the usual kitchen sink of control variables, and you will still find huge variations in wealth. People make choices - some have a squirrel gene and accumulate, while others a grasshopper gene and frolic in the sun. Can we really justify that those whose labour, skills, ingenuity and sheer determination and hard work which result in greater wealth than their fellow less energetic neighbours should be viewed as some form of collateral damage to the social order?Picketty starts the development of the theory with the *first fundamental law of capitalism*: that the capital share of national income is equal to the interest rate times the capital: income ratio or = r*(K/Y), which all first year students would recognise as an identity. Quite how Picketty manages to convert an identity that would apply to any economy, capitalist or otherwise, into a *fundamental law* is never explained.

While the book draws on a mass of data that he and co-workers have assembled, nowhere does he "engage in hypothesis testing, statistical analysis of causation or even correlation". This quote is from Acemoglu and Robinson[1] who go on to note that the whole of the Picketty apparatus hinges on the interest rate exceeding the growth rate of income so capital grows faster than income and inequality rises inexorably (although one does wonder what happens when we reach the point that the income of capital is equal to total national income?).

These authors point out that r>g is not necessarily true and certainly there is little or no empirical support. In fact they go on to use panel data for 28 countries from 1870 to 2012 to test whether the inequality (defined as the share of the top 1%) is explained by r-g. They run a large number of regressions and find no support for the claim whatsoever. They conclude that while r may be associated with higher inequality, there are many other factors (especially the nature of policies and institutions) that shape inequality and their regressions suggest these are quantitatively more important than r-g. In fact, the institutional context is notably absent from Picketty's analyses.

1 Acemoglu, Daron and James Robinson (2014) The Rise and Fall of General Laws of Capitalism (http://economics.mit.edu/faculty/acemoglu/paper)

Piketty argues inequality is here to stay, so what is needed are palliative policies. His big policy is a global wealth tax as no individual nation or international agency can control the forces of globalised capital. Such a tax "would contain the unlimited growth of global inequality of wealth."An equivalent thought experiment is to tax and redistribute wealth so that it is completely equally distributed today; and tomorrow we will observe that inequality will have increased.

It is not easy to think of a policy more aimed at increasing inequality than impeding global capital flows. Is there not rather compelling evidence that workers in low income countries have had greater employment, higher wages and more skill acquisition as a result of foreign capital investment that has raised the capital:labour ratios? Is there not evidence that that net national income in New Zealand has been higher than it would have been in the absence of foreign capital? And that wages are higher in foreign owned firms?

And if capital flows are the root cause of growing global inequality, then why stop at a meagre 0.5% tax rate? And even were this to be the optimal rate, it would have been helpful if le professeur had developed an analytical framework that leads us to this optimum. Sadly no such underpinnings are evident. Trendy economics books with political one liners may populate the book stands at airports, but they typically have limited intellectual half lives. In 50 years from now students will be reading Hayek, Mill, Ricardo, Hume and Smith, and Picketty will have been long forgotten.

Still, doubtless there will be the undecided out there who are sitting on the (picket) fence.

Theodore Dalrymple (2010) *Life at the Bottom* (London: Monday Books) is a vivid description of the under side of British society – the poor, the ill, the insane, the sex offenders, the petty criminals. Dalrymple is a medical doctor and writer, who has practiced in London's East End and Birmingham, and worked in prisons. This volume is despatches from the front line in a very real sense. But it is more than a collection of horror stories of how the other half lives. It is an analysis of how the liberal PC brigade have given intellectual respectability to policies that have made these very lives worse and contributed to the perpetuation of the underclass. A must read for anyone thinking about social policy.

I am attracted to anything Bill Easterly writes - and I well recall the Association bringing him to an NZAE conference as one of our keynote speakers. His penetrating analyses of the process of economic development led him to question once too often his employer's policies, to the point the World Bank encouraged him to seek other employment opportunities.

He has a splendid new book that carefully analyses the intellectual history of approaches to development. **William Easterly (2013) *The Tryanny of Experts, Economists, Dictators and the Forgotten Rights of the Poor* (New York: Basic Books)**. He makes the case that the long run path to development is found in creating incentives that release individual enterprise - a "bottom up approach." He contrasts this with the autocratic "top down approach" typified by era of the 5 year plans and promulgated by W. Arthur Lewis and Gunnar Mrydal, but not resulting in sustainable development.

Easterly is critical of both the World Bank and the Bill and Melinda Gates Foundation for seeking to apply technocratic solutions without adequate regard for the political and social contexts, nor the influence of history.

This is not a new critique of western approaches to development in the third world. Close to home, New Zealand pastoral farming techniques supported by Kiwi experts were transplanted into Chile with World Bank funding; and the results viewed largely as a failure.

Perhaps a disappointing feature of an otherwise splendid book is Easterly's explicit exclusion the alternative policy approaches he would advocate. His aim is to enlighten the debate between a Hayekian individual approach that respects the rights of the poor, and a Myrdalian approach that gives the state and the technical experts front billing by focussing on the well-being of the "nation" rather than that of the "individual." He achieves his aim but leaves the reader to draw out the policy implications while (hopefully) waiting for a sequel volume.

'FRAMES' - REFRAMING ECONOMICS FOR A BROADER CURRICULUM

Stuart Birks, k.s.birks@massey.ac.nz

Core economics courses have come to be dominated by a small number of primarily US textbooks. These come with associated teaching and assessment resources, much of which is available online and is suited to adaptation for MOOCs (see 'Frames' AI No.46, April 2013). Vocal opposition to the global standardisation and narrowing of the curriculum has come not only from heterodox and pluralist economists, but also from students. An example is the International Student Initiative for Pluralism in Economics; see http://www.isipe.net. However, there are significant barriers to change.

Alternative textbooks could be written: see http://www.worldeconomicsassociation.org/textbook-commentaries/alternative-texts. However, those available to date have yet to be widely adopted. There are reasons for this. Having fewer sales, they cannot provide the volume of support material offered by the dominant few. Introductory economics courses are frequently prerequisites for later courses, and so the content is tied. Any major departure from the norm will have to be agreed and supported by those in charge of the other courses. Attempts to offer genuinely pluralist courses can face resistance from students who are confused by the diversity of approaches.

Departments could choose to brand themselves as pluralist or heterodox, collectively offering a range of courses covering alternative approaches to economics. A few around the world have done this, but they are handicapped by the criteria used in research assessment exercises. It has been argued that the higher-ranked economics journals are mainstream (effectively special interest), making it harder for alternative researchers to rate highly. The research environment has also led some heterodox economists to find a more comfortable home outside economics departments.

Increasingly vocal and organised, economics student groups are raising objections to the curriculum, especially since the GFC. They have had a limited impact to date. There have been some initiatives which may be attempting to respond to their concerns. One such is the well-funded INET coreecon project, but it has been criticised by the Association for Heterodox Economists.

There may be another way forward which could have some impact in the short term and smooth the way for change in the longer term. Ha-Joon Chang is critical of economists who, "define their subject in terms of its theoretical approach, rather than its subject matter" (Chang, 2014, p. 21). Keynes (2007, p. 297) was concerned about economists who saw their theories and models as the real world, without considering additional 'reserves, qualifications and adjustments' (RQAs). One way of framing the issue, drawing on Birks (2015), is as follows:

- Consider theories as analogies. This has advantages over the 'competing paradigms' framing:
  - Analogies do not compete directly to 'explain' the real world.
  - It recognises that there are additional RQAs required for real world application.
- Just as with cross-disciplinary work, an analysis can be based on a combination of theories and approaches.
- Analysis does not consist solely of activity in the areas of theory and empirical analysis. There are also transitions to consider when going from theory to the real world, theory to empirical analysis, and empirical analysis to policy decisions.

With this framing, a body of theory can be presented as an example of an analogous system which may have some real world relevance. Some of the additional RQAs to consider in relation to one theory may then be identified from aspects that are emphasised in other theories. RQas can be given to show the strengths and limitations of various approaches.

This leads me to the second aspect of this column, the World Economics Association's Textbook Commentaries Project (see http://www.worldeconomicsassociation.org/textbook-commentaries). This recently launched initiative involves the provision of a web platform providing short, stand-alone commentaries which can be used as resources primarily in first and second year economics courses. The commentaries relate either to material in chapters of specific, standard textbooks or to common themes in core courses. They consist of additional explanation, critical comment, or alternative perspectives. Some use extracts from alternative textbooks, increasing awareness of these. Others even link to YouTube clips. They are designed as brief talking points and so can be added to a course without overloading it. All that is needed is for a link to be placed on a course web page or in a discussion forum. As an independent platform, commentaries from many viewpoints are possible, including political economy, history, history of economic thought, behavioural economics, institutional economics, Marxist economics and so on.

In time it should be possible for a lecturer to select commentaries topic by topic so as to add one or more of these alternative perspectives to a standard mainstream course. Some lecturers may already be using their own supplementary material, in which case they could capitalise on it and possibly get feedback from others by submitting their own commentaries. The resources can also be used by tutors and students. Without overturning the entire teaching of economics, the project gives a way for additional perspectives and critical comment to be made readily available.

The platform is interactive in that comments on commentaries are enabled, so students and others can raise questions or discuss the issues. As a public, globally accessible, web-based platform focusing on topics in courses around the world, a wide range of views can be canvassed and political and country differences identified. As a public forum, the quality of the material can be tested through submitted comments. With support, it can grow into a valuable resource.

The framing outlined in the bullet points above could be seen as one rationale for this project and a way for students to interpret the material. Other reasoning is possible, such as aiming to teach a core course from more of a political economy perspective, or, with suitable commentaries, to add an own-country dimension to a US-based textbook. Where publishers provide additional resources, these tend to reinforce the content of their textbooks. Through an independent platform, wider and more critical perspectives can be made available.

There are many people who are concerned about the way universities, curricula and individual academics appear to be increasingly constrained. While new technologies and organisational structures can have this effect, the same resources can be used in other ways. In a complex world alternative outcomes may also eventuate.

For the project, see http://www.worldeconomicsassociation.org/textbook-commentaries.

For some background, see http://www.worldeconomicsassociation.org/newsletterarticles/wea-tcp and http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2515373.

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BLOGWATCH

By Paul Walker (paul.walker@canterbury.ac.nz)

The 2014 Sveriges Riksbank (Bank of Sweden) Prize in Economic Sciences in Memory of Alfred Nobel, to give it its full title, was awarded to Jean Tirole "for his analysis of market power and regulation". This award was greeted with excitement by some, see for example Kevin Bryan <http://afinetheorem.wordpress.com/2014/10/13/nobel-prize-2014-jean-tirole/> at the "A Fine Theorem" blog <http://afinetheorem.wordpress.com/>, Joshua Gans <http://www.digitopoly.org/2014/10/13/tirole-and-pasteur/> at "Digitopoly" <http://www.digitopoly.org/> and Tyler Cowen <http://marginalrevolution.com/marginalrevolution/2014/10/2014-nobel-laureates-in-economics-are-jean-tirole.html> at "Marginal Revolution" <http://marginalrevolution.com/marginalrevolution/>., and less excitement by others, see for example Peter Klein <http://organizationsandmarkets.com/2014/10/13/tirole/> at "Organizations and Markets" <http://organizationsandmarkets.com/> and Joseph Salerno <http://bastiat.mises.org/2014/10/bizarro-world-kirzner-awarded-the-2014-nobel-prize-in-economics/> at the "Mises Economics" Blog <http://bastiat.mises.org/>.

At the "Stumbling and Mumbling" blog <http://stumblingandmumbling.typepad.com/stumbling_and_mumbling/> Chris Dillow considers 'The Capitalism Question' <http://stumblingandmumbling.typepad.com/stumbling_and_mumbling/2014/11/the-capitalism-question.html>. He claims that the efficiency of capitalism is now in doubt, not just its morality. Dillow argues that talk of things like secular stagnation and an end to growth shows that capitalism has lost its dynamism as of late. In another blog post Dillow asks, 'What is the case against evidence-based policy?' <http://stumblingandmumbling.typepad.com/stumbling_and_mumbling/2014/10/against-evidence-based-policy.html>. He writes, "What is the case against evidence-based policy? This is one question prompted by David Cameron's refusal to legalize drugs in the face of evidence that criminalization of them doesn't reduce their use. The question, of course, generalizes. Many of us would argue that fiscal policy and immigration policy are also less than perfectly based in the evidence - and no doubt you can think of other examples. There must, therefore, be something to be said against evidence-based policy. But what?".

Timothy Taylor, the "Conversable Economist" <http://conversableeconomist.blogspot.co.nz/>, asks 'Should Voting be Compulsory?' <http://conversableeconomist.blogspot.co.nz/2014/11/should-voting-be-compulsory.html>. He writes, "Just to put my cards face up on the table right here at the start, I'm not in favor of compulsory voting. But I think the case for doing so is stronger than commonly recognized. Let me lay out the arguments as I see them: low turnover, what the penalties look like in some other countries for not voting, the free speech/constitutional issues, and whether any resulting differences in outcomes would be desirable." Meanwhile at the "Bleeding Heart Libertarians" <http://bleedingheartlibertarians.com/> blog Jason Brennan puts out 'The General Challenge to People Who Believe There's a Duty to Vote' <http://bleedingheartlibertarians.com/2014/11/the-general-challenge-to-people-who-believe-theres-a-duty-to-vote/>. Brennan asks Why is there a duty to vote? Such a duty is not a basic or foundational moral principle and thus if such a duty exists it must be derived from other more basic principles. What are these principles?

At VoxEU.org <http://www.voxeu.org/>, S. M. Ali Abbas, Laura Blattner, Mark De Broeck, Asmaa El-Ganainy and Malin Hu take 'A 100-year perspective on sovereign debt composition in 13 advanced economies' <http://www.voxeu.org/article/advanced-economies-sovereign-debt-100-years-data>. They argue that while there has been renewed interest in sovereign debt since the Global Crisis, there has been relatively little attention paid to its composition. Sovereign debt can differ in terms of the currency it is denominated in, its maturity, its marketability, and who holds it – and these characteristics matter for debt sustainability. Also at VoxEU.org, Katharina Knoll, Moritz Schularick and Thomas Steger take a look at 'Home prices since 1870: No price like home' <http://www.voxeu.org/article/home-prices-1870>. They argue that while house price fluctuations have taken centre stage in recent macroeconomic debates, little is in fact known about their long-run evolution. Their post presents new house price indices for 14 advanced economies since 1870. Real house prices display a pronounced hockey-stick pattern over the past 140 years. They stayed constant from the 19th to the mid-20th century, but rose strongly in the second half of the 20th century. Sharply increasing land prices, not construction costs, were the key driver of this trend.

Inequality is a hot topic right now and John Cochrane at "The Grumpy Economist" blog <http://johnhcochrane.blogspot.co.nz/> has written a few recent posts on the issue. In the first Cochrane asks 'Why and how we care about inequality?' <http://johnhcochrane.blogspot.co.nz/2014/09/why-and-how-we-care-about-inequality.html>. He argues that one sensible response to the question is to acknowledge that inequality, by itself, is not a problem. Inequality is a symptom of other problems. In a second post Cochrane talks about 'Envy and excess' <http://johnhcochrane.blogspot.co.nz/2014/10/envy-and-excess.html>. He discusses the claim that increasing inequality is changing peoples' behaviour. Cochrane writes "But they say, and I was going after in the post, all sorts of other things. That inequality will cause poor people to spend too much, that it will cause them to rise in political rebellion, for example. For that to happen, for the presence of the rich to affect their behavior in any way, they have to know about how the exploding 1/10 of 1% live, and how many of them there are. Which just doesn't make any sense." In the third post Cochrane looks at 'Chicken and Egg Inequality' <http://johnhcochrane.blogspot.co.nz/2014/10/chicken-and-egg-inequality.html>. He looks at a couple of recent reports out of the U.S. that argue that inequality is not only rising but having damaging effects on the US economy. Again he argues that inequality is a symptom of other things going wrong, and that these things desperately need fixing no matter how much the top 1% earn. In the local blogs, Eric Crampton at "Offsetting Behaviour" <http://offsettingbehaviour.blogspot.co.nz/> talks about an 'Inequality narrative-buster' <http://offsettingbehaviour.blogspot.co.nz/2014/10/inequality-narrative-buster.html>. He argues that it's been pretty clear that income inequality in New Zealand has been stagnant for at least the last decade or two. It rose in the late 80s and early 90s, but nothing much has happened since then.

Weshah Razzak is talking about Big Data <http://razzakw.blogspot.co.nz/2014/11/big-data-and-economic-policy.html> at the "W A Razzak Economics Today" blog <http://razzakw.blogspot.co.nz/>. He asks how Big Data could potentially affect economic policy, such as monetary policy.

In some good news on the New Zealand economy front Donal Curtin argues that the current growth cycle is still in good shape <http://economicsnz.blogspot.co.nz/2014/11/the-economys-still-in-good-shape.html>. At his 'Economics New Zealand' blog <http://economicsnz.blogspot.co.nz/> he notes that the New Zealand Institute of Economic Research's survey measure of firms' trading activity in September suggests that the economy was still growing at about a 3% rate. He adds that looking ahead, prospects are still pretty upbeat, too.

MEASURING MONETARY POLICY IN CONVENTIONAL AND UNCONVENTIONAL MONETARY POLICY ENVIRONMENTS

Leo Krippner

In the wake of the Global Financial Crisis, many foreign central banks have faced economies with inflation below target levels and large and persistent negative output gaps (that is, low levels of output relative to potential output). They also exhausted their capacity for conventionally stimulating output and inflation through lower interest rates once policy rates were set at or close to the zero lower bound (ZLB). Further stimulus has since been provided through unconventional policy actions, such as quantitative easing and long-horizon forward guidance.

However, the questions of "how much further stimulus?" and, more importantly, "what effect is it having?" are hard to answer in quantitative terms. Part of the difficulty is that there is no longer a consistent metric for comparing back to periods when the policy rate alone provided a familiar and useful gauge of monetary stimulus. An alternative measure that consistently summarizes "overall monetary stimulus" in both conventional and unconventional monetary policy environments is desirable, both for routine monitoring and particularly for any quantitative analysis with macroeconomic data.

I have proposed the Effective Monetary Stimulus (EMS) as such a measure. The EMS summarizes current and expected nominal policy rates (that is, without an inflation adjustment) relative to a long-horizon nominal natural interest rate. The reasons for proposing this concept relates back to two standard principles of monetary policy. First, a policy rate set below (above, or less below) the natural rate represents a stimulatory (restrictive) stance of monetary policy. Second, expectations of how the policy rate/natural rate gap will evolve are also important to economic agents.

In practice, the expected policy rate path and the natural rate must be estimated. The tractable shadow/ZLB yield curve framework that I have developed, based on an idea by Black (1995), provides a consistent means of doing so for both conventional and unconventional environments. The details of the framework itself, and its estimation, are contained in Krippner (2013, 2015), but the essential idea can be explained intuitively. Observed yield curve data (nominal interest rates plotted by time to maturity) may be decomposed into a hypothetical shadow yield curve and an option effect component. The shadow yield curve would prevail in the absence of physical currency, but in the real world, physical currency provides an option for investors to avoid negative shadow interest rates, and that option imposes the ZLB constraint.

For the purposes of this note, the resulting shadow yield curve estimates are used to obtain the expected path of the Shadow Short Rate (SSR), the expected policy rate path, and the EMS. I have illustrated the concept with examples for the United States in figures 1.A and B, and I explain each in turn below.

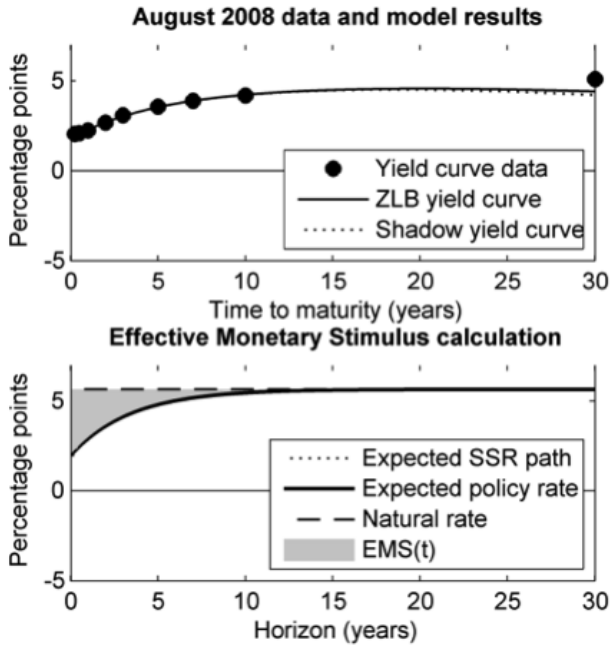

Figure 1.A: Example of a yield curve data and the EMS in a conventional policy environment.

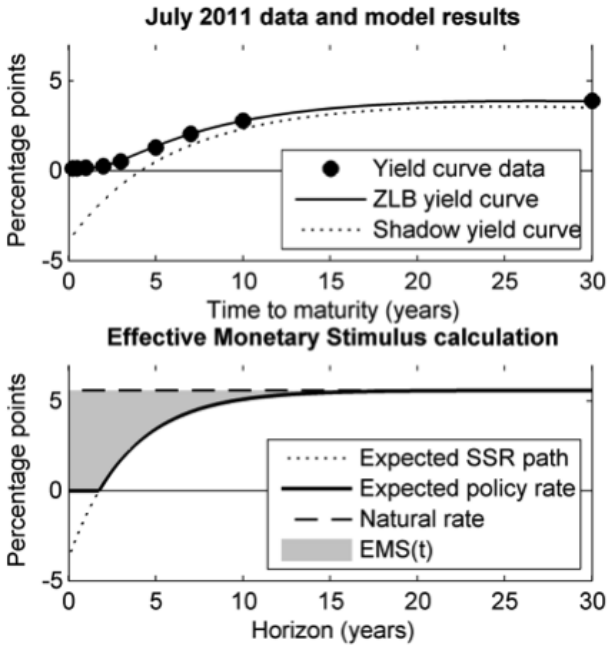

Figure 1.B: Example of a yield curve data and the EMS in an unconventional policy environment.

Figure 1.A shows a conventional policy environment, where the yield curve data are unconstrained by the ZLB, and the expected SSR and policy rate path are above zero for all future horizons. The estimated Level component from the shadow/ZLB yield curve model, which reflects long-maturity interest rates, provides the natural rate estimate. The estimated shadow yield curve provides the expected SSR path, which equals the policy rate path in this example. Those paths mean-revert to the natural rate in accordance with the information implied in the yield curve data, as represented by the shadow/ZLB yield curve model.

The EMS is the area between the expected policy rate path and the natural rate, which in this example indicates a moderately stimulatory stance of monetary policy.

Figure 1.B shows an unconventional policy environment, where the yield curve data are highly constrained by the ZLB. The expected SSR path obtained from the estimated shadow yield curve is negative initially out to a horizon of about two years, and then becomes positive as it mean-reverts to the natural rate. The policy rate path is obtained by truncating the initially negative SSR path to zero, and the policy rate path then equals the SSR path when the latter is non-negative. The result is a much larger expected policy rate/natural rate gap, or a more stimulatory stance of monetary policy, than in figure 1.A. The EMS summarizes that concept as a larger area in figure 1.B than figure 1.A.

Figure 2 illustrates the time series of the EMS measure. It shows the areas illustrated in figures 1.A and B, but for each monthly observation of yield curve data in the sample. The evolution of the EMS has been consistent with conventional United States monetary policy operated with policy interest rate cycles up to late 2008. Furthermore, the EMS has continued consistently to reflect unconventional monetary policy events since that time. It first captures the unconventional policy easing events (indicated with down arrows), and then the large recent effective tightening of US monetary policy as the Federal Reserve first foreshadowed (up arrow) and then proceeded to taper the third programme of quantitative easing.

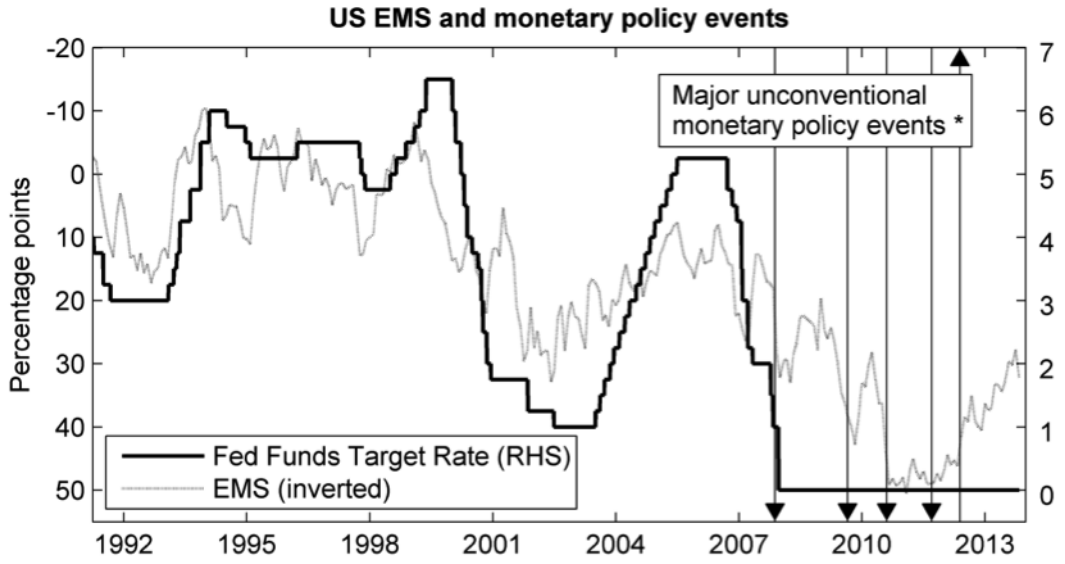

Figure 2: The US EMS is consistent with conventional and unconventional monetary policy events (*quantitative easing 1 [QE1], QE2 foreshadowed, start of long-horizon forward guidance, QE3 and unemployment-based forward guidance, tapering of QE3 foreshadowed).

Importantly, the EMS is robust empirically across different specifications for the shadow/ZLB yield curve models. Therefore, monitoring any particular EMS provides a consistent narrative of monetary policy, or using it as data in econometric analysis with output gap and inflation data, will provide similar results. Results so far confirm that the EMS has the relationships with the output gap, inflation, and currencies that one would expect from a measure of monetary policy. However, that would involve a new set of "fine lines", so it will have to wait for a subsequent contribution.

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GREENHOUSE GAS EMISSIONS FROM CONSUMPTION IN NEW ZEALAND

By Corey Allan

Motu Economic and Public Policy Research

We New Zealanders like to think of ourselves as clean and green; it is also an important part of our international marketing strategy. Yet we ranked fifth in the world in terms of greenhouse gas emissions per capita in 2011, at 16.6 tonnes of carbon dioxide equivalent (t-CO2eq) (Ministry for the Environment 2014). Production emissions per-capita have fallen from 18.3 t-CO2eq in 2005 (Ministry for the Environment 2012). These figures calculate emissions based on the emissions that occur within a country's borders, which is only one way to consider a country's progress towards a low-emission future. An alternative approach calculates emissions based on where goods are consumed. All of us either consume emissions directly (for example, burning fuel in the car) or indirectly (for example, the emissions embodied in a bottle of milk). In an upcoming Motu Working Paper, co-authored with Suzi Kerr and Campbell Will, we look for evidence that New Zealand households are changing their consumption patterns towards less emissions-intensive goods.[1] We find that per-capita consumption emissions fell only marginally between 2006/07 and 2012/13, a decrease of 0.2 t-CO2eq. This small decrease occurred over a time period where we see very little growth in household incomes; it is likely that emissions would have risen had incomes grown. This result suggests that we are not making as much progress towards a low-emission future as implied by the change in per-capita production emissions.

We calculate household consumption emissions using the methodology described in Romanos et al. (2014). This uses the 2007 input-output tables from Statistics New Zealand, industry fuel requirements, and fuel emissions factors to calculate the emissions associated with a dollar of output in each of the 106 industries in the input-output tables. These industries are then matched to categories of household expenditure to derive a vector of the emissions associated with an extra dollar of consumption in each category. Finally, we multiply the emissions associated with a dollar of consumption by the value of each household's consumption in each category, adjusting for price changes between years. We use the unit record data from the 2006/07 and 2012/13 Household Economic Surveys from Statistics New Zealand to get a better understanding of how household emissions vary with household characteristics and how emissions have changed between the surveys. We fix product emissions at their 2007 level, so any change in emissions we detect between surveys must be due to changes in household behaviour, rather than improvements in production efficiency.

The main sources of household emissions are food, household energy, and transport. These three categories account for 80% of emissions for the average household. Within these categories meat, dairy, electricity, transport fuels (petrol and diesel), and air travel are the most emissions intensive per dollar spent. In a pooled sample of around 5000 households, we find that household expenditure (a proxy for permanent income) and household composition explain the majority of the variation in emissions across households, at around 75%. Other demographic variables, such as the age of the household head, region, education, employment status, and home ownership status explain little of the remaining variation. Our results show that a 10% increase in household expenditure is associated with a 7% increase in household emissions. This elasticity varies a lot by emissions category; the same increase in expenditure is associated with a 3% increase in emissions from household energy and a 56% increase in emissions associated with international air travel for households with total expenditure above $75,000. Air travel, a luxury good, is financed out of discretionary income; households have more flexibility in how to use this income. One thing that discretionary incomes tends not to be used for is electricity. Overall, emissions from transport (fuels and air travel) and meat are the most sensitive to changes in permanent income, suggesting small changes in diet or transport choices will have large effects on household emissions at the margin.

While per-capita (and per household) emissions have fallen only slightly between the two surveys, the difference is statistically significant, even after controlling for household expenditure, composition, and other demographics. The small reduction in total emissions does mask changes in specific consumption categories. We find that emissions from household energy (electricity, gas, and solid fuels) has fallen by 10% between the survey years, and that this fall is statistically significant after controlling for household expenditure, composition, and demographics. Emission from all three categories of household fuels fell between the survey years, but the fall in electricity accounts for about half of the overall drop.[2] This could be the result of general improvements in energy efficiency arising from more efficient appliances or the effects of the Warm Up New Zealand insulation grant scheme, although the results of Grimes et al. (2012) suggest this effect is small. It could also be a price effect; electricity prices increased by 30% between surveys. Using an estimate of the price elasticity of residential electricity demand of -0.12 from Halliburton (2011), a 30% price increase should result in a 3.6% fall in demand. Most of the reduction in electricity emissions could therefore be due to the price increase. The fall in emissions from household energy is partially offset by a large increase in emissions from air travel, though this increase is not statistically significant once other factors are controlled for.

Emissions are embodied in all goods and services consumed by households. However, there is relatively little information about the GHG content of these goods and services so that households can make more informed consumption choices. While we find some evidence of households reducing the emissions from their household energy consumption, we find little systematic evidence

1 This research is part of Motu's *Shaping New Zealand's Low-Emission Future* project, supported by the Aotearoa Foundation.

2 Electricity accounts for the vast majority of emissions from household energy.

that households are moving towards a lower emissions-intensive consumption bundle. It is likely that household emissions would have been even higher in 2013 were it not for the Global Financial Crisis. With the return of economic growth, it is likely that household emissions will continue to increase, unless consumption patterns begin to change.

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For more information about Motu's Shaping New Zealand's Low-Emission Future programme, please visit the project website at http://www.motu.org.nz/research/group/shaping_new_zealands_low-emission_future, and check out the project blog at http://low-emission-future.blogspot.co.nz/.

NEW ZEALAND ECONOMIC PAPERS

CALL FOR PAPERS SPECIAL ISSUE ON THE ECONOMICS OF SAVING

The economics of saving is a well-established research avenue due to its important role within contemporary economic theory and policy analysis. It is the intention of this special edition of New Zealand Economics Papers to focus specifically on the economics of saving by presenting a selection of research focusing on the various considerations, impacts and implications associated with savings in economic systems. As such, we welcome papers from all disciplines of economic research, provided they maintain a direct focus on issues of savings. Some noted areas of interest for this issue include, but are not limited to:

- Domestic and cross national savings rates
- KiwiSaver and retirement savings schemes
- Savings rates and economic development
- Consumption dynamics

Please note that papers specifically relating to a New Zealand context is not a criterion for acceptance.

The special issue of New Zealand Economic Papers will be edited by the incoming co-Editors for this journal: Gail Pacheco (email: gail.pacheco@aut.ac.nz) and Arthur Grimes (email: arthur.grimes@motu.org.nz).

New Zealand Economic Papers is a fully peer-reviewed scholarly journal published by leading international publishers Taylor & Francis (under the Routledge imprint) on behalf of the New Zealand Association of Economists. The journal is indexed in leading international databases including EconLit, ABI/Inform and EBSCO.

Selection of papers for the special issue will follow peer review. Submissions should be made online. Please indicate that your paper is meant for the special issue on the economics of saving during the submission process.

Deadline for submission: **December 15th 2014**

NATIONAL ACCOUNTS AND BALANCE OF PAYMENTS ADOPT NEW INTERNATIONAL STANDARDS

Statistics New Zealand has recently released revised national accounts, balance of payments and international investment position statistics. [1] These incorporate key changes recommended in the new international standards.[2] Additional revisions have been introduced arising from methodological improvements and new annual benchmarks.

This article provides a summary of the changes resulting from the new standards. A more detailed explanation of these and the other revisions can be found in the relevant Statistics New Zealand releases available on the website.

THE NEW STANDARDS

The national accounts and balance of payments are based on international standards that have been jointly agreed to and promoted by the UNO, IMF, World Bank, OECD and Eurostat. The existing standards had been developed in the early 1990s and, since then, the economic environment in many countries had evolved significantly. In addition, methodological research over the last decade or so had resulted in improved methods of measuring some of the more difficult components in the accounts.

The new standards are the product of a multi-year, international collaborative exercise. While the main focus was to introduce changes that make the macroeconomic statistics more relevant for the analysis of modern economies, the opportunity was also taken to ensure consistency across all related manuals. Consequently, manuals on national accounts, balance of payments, government finance statistics and monetary and financial statistics have all been revised and made consistent. The adoption of these new standards is a major global exercise, involving changes not only to the macroeconomic statistics themselves but also to the underlying source data.

It is important to note that while the new manuals contain a large number of changes, the latest versions do not herald any radical departure from the old standards. The framework and content of the existing national accounts and balance of payments are largely unchanged, and users of the statistics will not need to reacquaint themselves with a radically overhauled set of statistics. The changes that have been introduced clarify, extend and refine the existing series and improve their relevance for analysis.

1 The national accounts were released on 21 November and can be accessed at http://www.stats.govt.nz/

Updated balance of payments are at http://www.stats.govt.nz/browse_for_stats/economic_indicators/balance_of_payments/BalanceOfPayments_HOTPJun14qtr.aspx

2 System of National Accounts 2008, available at http://unstats.un.org/unsd/nationalaccount/sna2008.asp

Balance of Payments and International Investment Position Manual (Sixth edition) available at http://www.imf.org/external/pubs/ft/bop/2007/bopman6.htm

NEW FEATURES THAT IMPACT ON THE NEW ZEALAND MACROECONOMIC ACCOUNTS

These new features largely fall into three distinct categories: real and financial assets; the financial sector; and globalisation and related issues.

1. ASSETS

   The most substantive change to the international standard is the expansion of the fixed asset boundary to include a number of new types of assets. This change was made to better reflect the fact that some expenditures currently expensed are more of a durable nature and continue to provide a flow of capital services over many years.

   The key changes in asset recognition are as follows.

   (a) Capitalisation of research and development expenditures

   After decades of debate, it has been decided to capitalise research and development expenditure rather than include it as a current expense. This decision reflects the increasing importance of intangible assets in the production process. R&D investment, classified as an intellectual property product in the standards, leads to a lift in GDP. While this new treatment is the main contributor to the upward revision of New Zealand's GDP as a result of the SNA 2008 changes, it is less than in other OECD countries. This reflects New Zealand's private expenditure on R&D being considerably lower than the OECD average (as a proportion of total GDP). The impact of R&D undertaken by non-market government units under the new treatment is less direct. This is because much of their R&D expenditure is already captured in GDP as final government expenditure. However, the accumulation of R&D capital leads to additional consumption of fixed capital, and a higher level of government expenditure. In most years, this accounts for just over half of the GDP change due to the new R&D treatment.

   (b) Capitalisation of weapons delivery systems

   Weapons delivery systems, such as fighter aircraft or tanks, were treated as a current expense. Under the new standards, this expenditure is treated as an investment with the weapons classified as fixed assets. This increases GDP not due to the reclassification – weapons expenditures are already included in final government expenditure – but due to the inclusion of consumption of fixed capital in government expenditure. However, expenditure on weapons systems by the New Zealand armed forces is small, so the effect on overall GDP is not large.

   (c) Valuation of assets produced in-house

   Assets produced in-house are often measured as the sum of the cost of inputs used in the asset production process as there are often no market prices available. The updated standards have revised the recommended valuation method to also include the full value of capital services in the costs, including a return on capital. This valuation change raises the level of investment and GDP. In recent periods, the impact is small. However, there is a larger impact in the pre-1990 period when a significant amount of government construction was undertaken by

internal agencies (eg Ministry of Works Department, NZ Rail, NZ Electricity Department, NZ Post Office, and local authority power boards, roading and construction units).

(d) Depreciation of ownership transfer costs

When assets such as dwellings are purchased, the purchase price includes the associated transfer costs incurred by the purchaser, and are depreciated along with the underlying asset. The update recognises that transfer costs are used over the expected ownership period rather than the whole service life of the asset. The shorter ownership period results in an increase in consumption of fixed capital. As most ownership transfer costs are incurred by market producers, the increase in consumption of fixed capital will be largely offset by a fall in net operating surplus, leaving GDP unaffected. The main impact of this change is to reduce household saving which is measured net of the consumption of fixed capital on owned dwellings.

2. THE FINANCIAL SECTOR

The standards have been updated to reflect developments in one of the fastest changing segments of the economy. As New Zealand does not produce a full set of national accounts, which would include a full suite of sector financial accounts and balance sheets, many of the SNA 2008 changes do not impact on the published series. The key ones that do are as follows.

(a) Service fees on non-life insurance

Under the SNA93 standards, the output of non-life insurance is essentially measured as premiums less claims. This formula could often lead to erratic output series and even negative values when exceptional events such as the Christchurch earthquake led to very large claims. Under the new standard, expected claims are deducted, rather than actual claims. This effectively smooths the measurement of service fees, and better reflects actual insurance company practices. In addition, the exceptional disaster-related claims payouts are treated as capital rather than current transfers, thus leaving current savings in the different sectors unaffected. The impact on the Statistics New Zealand macroeconomic series is not large as both of these improvements had been anticipated some years ago and had already been adopted under the old standard. Refinements to the measurement methods used have resulted in some revisions.

(b) Unfunded pension schemes

The new standard recommends a revised treatment of defined benefit employer pension schemes whereby the true liability of the employers will be recorded, and matched by a household pension asset, whether or not the schemes themselves are over or under funded. This treatment applies to both funded and unfunded schemes. For New Zealand, the major impact arises through revising the treatment of the Government Superannuation Fund. The full recording of the evolution of the pension fund asset (matched by the increase in the government liability), involves the inclusion of a notional investment income flow from the fund to households, which leads to higher household saving offset by a fall in government saving. This change has no impact on GDP.

3. GLOBALISATION AND RELATED ISSUES

The past twenty five years have seen a significant growth in cross-border economic activity and associated financial flows resulting from globalisation and financial innovation. In the updated standards, these are the major themes that underlie many of the detailed changes affecting the external accounts.

Key changes are:

(a) Merchanting operations

The revised standard adopts a strict economic ownership principle when recording international transactions. Merchanting refers to those situations where a resident entity purchases and sells goods offshore without them entering the resident's domestic territory. Consistent with the strict ownership principle, these flows are now recorded in goods flows, whereas previously only the merchanting margin was recorded as a service. The economic ownership principle also applies to the flows associated with cross-border manufacturing but the source data needed to implement this change is not yet available.

The current account balance remains unchanged as a result of the above two changes. However, there are changes to the aggregate levels of the good and services flows.

(b) Transfer of personal wealth through migration

Migrants' transfers measure the net wealth of individuals who migrate. Previously, the wealth 'transfer' was recorded as a transaction or flow in the external capital account. Under the new treatment, migrants' transfers are removed from the capital account as there is no actual transaction occurring. There is no change in the ownership of the financial assets and liabilities that the migrants leave behind. Instead the value of migrant's financial assets and liabilities are recorded in the International Investment Position statement in "other volume changes".

(c) New breakdowns in the balance of payments and IIP

A new category, fellow enterprises, is introduced within direct investment. Fellow enterprises are entities that have the same ultimate parent company, but there is no direct ownership linkage between them. Transactions between fellow enterprises were in scope of BPM5 but these were not explicitly identified. A small change in the financial instruments has also been introduced, with financial derivatives now recognised as a separate category.

(d) "Balance sheet "presentation

In the balance of payments and IIP, aggregate direct investment income, financial flows, and financial positions are now recorded on an asset and liability (balance sheet) basis rather than on the directional basis. Under the directional basis, direct investment statistics are organised according to whether the direct investment is outward or inward, leading to flows / stocks between parents and subsidiaries being recorded nett. Under the balance sheet approach, direct investment data is presented gross, depending on whether they relate to an asset or a liability from New Zealand's perspective. This change brings the recording of direct investment stocks and flows into line with other investment types, and also facilitates balance sheet analyses consistent with other macroeconomic statistics.

CHANGES TO BE IMPLEMENTED IN FUTURE

While most of the key changes have now been introduced into the national accounts and balance of payments statistics, a number of the changes were deferred as they either require new source data collections or further research on (mainly) backdating methods. Changes yet to be implemented include: recording cross-border manufacturing flows on a strict economic ownership basis; attributing the retained earnings of investment funds to unit / shareholders; recording tax credits as subsidies; and classifying certain cultivated assets as fixed assets.

In addition, the Statistical Classification for Institutional Sectors has been revised but has not yet been adopted for the institutional sector accounts. The main changes are the inclusion of auxiliary financial institutions (for example, investment advisers and fund managers) in the financial sector, and an improved delineation of unincorporated enterprises, holding companies and trusts.

An implementation date for these remaining changes is still to be decided.

INTERNATIONAL COMPARISONS

This section compares the impact that the updated standards have on nominal GDP in a selection of countries. Several factors need to be taken into account when making a comparison, as the impact of the changes depends very much on the relative size of the activities or transactions involved within each country. For example, the relative size of R&D expenditures explains much of the inter-country differences.

It is common for countries to also make associated data and methodology improvements when updating international standards. In some cases the effect of the additional updates is considerably greater than that from the updated international standards.

UPDATE TYPE	COUNTRY AND GDP LEVEL CHANGE (PERCENT)				
	New Zealand (2010)	Australia (2008)	United Kingdom (2009)	United States (2009)	Canada (2010)
International standards (of which R&D)	+1.3 (+1.1)	+1.6 (+1.3)	+2.3 (+1.6)	+2.9 (+2.4)	+1.8 (+1.3)
Associated updates	0.0	+2.8	+2.3	+0.3	+0.8
TOTAL CHANGE	**+1.3**	**+4.4**	**+4.6**	**+3.2**	**+2.5**

Note: Non-New Zealand data are taken from Summary of ESA10 and BPM6 changes on sector and financial accounts, published by the Office of National Statistics in the UK, which also provides a breakdown of the international standard changes: see http://www.ons.gov.uk/ons/rel/naa1-rd/national-accounts-articles/impact-of-esa10-and-bpm6-changes-on-sector-and-financial-accounts-and-balance-of-payments/index.html.

Jeff Cope
Principal Economic Statistician
Statistics New Zealand

USING BIG DATA TO MEASURE PRICE CHANGE

Francis Krsinich

Compiling price indexes from 'big data', such as scanner data and web-scraped online data, presents particular methodological challenges for price measurement. The Prices Unit at Statistics NZ have been researching this area for the past five years.

With the release of the September 2014 quarter CPI, New Zealand became the first country to make such comprehensive use of scanner data for measuring price change for consumer electronics items in a CPI.

And our research on the potential of a new approach to price measurement, using the longitudinal information in the data by using fixed effects, is now beginning to gain acceptance within the international Prices community.

SCANNER DATA FOR CONSUMER ELECTRONICS PRODUCTS

Many products have their barcodes scanned when they are purchased. This retail transaction data – or 'scanner' data – records prices, quantities sold, and associated information for all transactions across the full reference period. In the September 2014 quarter we began using scanner data supplied to us by market research company GfK, for a range of key consumer electronics categories, such as televisions and computers.

The advantages of scanner data are that it:

- allows more accurate price measurement;
- allows us to re-use existing data;
- accurately reflects seasonality in quantities;
- reflects product substitution.

MORE ACCURATE PRICE MEASUREMENT

Until now, we have relied on sampling consumer electronics prices across several dimensions – categories, products, outlets, and time. For each consumer electronics category, a product was priced at each of about 60 appliance retailers and department stores. When a product was no longer available, we replaced it with a similar product, based on discussion with retailers about market share and features.

We based quantities, or expenditure shares, on information we acquired during the Household Economic Survey reference period, and updated every three years.

In contrast, scanner data has the potential to give a more complete picture of both prices and quantities sold at any point in time. With information on the characteristics of each product, we are also able to use statistical methods to explicitly quality-adjust the price indexes. We are using a method we developed with Statistics Netherlands called the imputation Tornqvist rolling year GEKS (ITRYGEKS) index. This incorporates statistical regression models to adjust the measurement of price change appropriately for the changing mix of characteristics of the products being bought by consumers. The co-authored paper on this approach, "Scanner Data and the Treatment of Quality Change in Nonrevisable Price Indexes" has recently been published in the Journal of Business and Economic Statistics.

RE-USE OF EXISTING DATA

Market research companies already collate consumer electronics scanner data for businesses, so it is good practice to re-use the data to generate official statistics. This reduces fieldwork, and the respondent load associated with collection, which involves observing products and prices in stores, and discussing product changes with store staff.

ACCURATE REFLECTION OF SEASONALITY IN QUANTITIES

Scanner data for consumer electronics has monthly information on both prices and quantities. Quantities can be very seasonal. The previous fixed-basket approach to price measurement, when applied to seasonal prices and quantities, has the potential to over- or under-state actual price movements when we combine seasonal prices with quantities that were fixed at an average annual level. With a method such as the ITRYGEKS index, however, we can incorporate the seasonal quantities appropriately.

BIG DATA WHERE THERE IS NO INFORMATION ON PRODUCT CHARACTERISTICS

Statistics New Zealand is also researching the potential of scanner data for price measurement of supermarket products. Unlike the consumer electronics scanner data, however, supermarket scanner data has little information on product characteristics. This means that we can't use the ITRYGEKS method to produce quality-adjusted price indexes.

Web-scraped online data, such as that used by PriceStats in the United States to produce daily inflation indicators, also has no characteristic information. Statistics New Zealand recently entered into a research agreement with US-based PriceStats, who are supplying us with daily online data for a range of New Zealand retailers, to investigate new methodologies for price measurement.

For both these data sources, we are considering the use of a method that incorporates fixed-effects – that is, fitting product-specific intercepts - to control implicitly for the changing characterisics of products over time.

FIXED-EFFECTS FOR IMPLICIT QUALITY-ADJUSTMENT

Krsinich (2014) describes the approach Statistics NZ is considering to estimate non-revisable quality-adjusted price indexes from scanner data and online data where there is no information available on product characteristics.[1]

The paper shows that the relatively simple fixed-effects (or time-product dummy) index is equivalent to a fully-interacted time dummy hedonic index based on all price-determining characteristics of the products, despite those characteristics not being observed. In production, this can be combined with a modified approach to splicing that incorporates the price movement across the full estimation window to reflect new products with one period's lag, without requiring revision of previously published movements.

This fixed-effects window-splice (FEWS) index is looking very promising as a relatively simple, yet effective, method for producing non-revisable quality-adjusted price indexes from big data where characteristics are not available.

1 This paper, *"Fixed-effects with a window splice: quality-adjusted price indexes with no characteristic information"*, was presented at the UNECE/ILO meeting of the group of experts on consumer price indices in Geneva in May 2014.

THE GEN (GOVERNMENT ECONOMICS NETWORK) CONFERENCE 2014

The conference held on 5 November 2014 at Te Papa Museum of New Zealand in Wellington was another successful event for GEN. The conference titled "The relevance of economics in a changing world" was GEN's 4th annual conference. It has a number of high-calibre speakers and was attended by 154 public and private sectors employees.

The conference was opened by Chair Veronica Jacobsen and Gabriel Makhlouf, Secretary to Treasury. In his speech, Gabriel encouraged economic professions to use economics to identify and analyse relevant trade-offs in assisting policy decision-making and by using appropriate economic tools that consider the wisdom and knowledge from various disciplines. He also challenged all the economists in the public sector to keep up with the play with the latest economic techniques; embrace the diversity of thought and escape from old thinking.

In the keynote address, Professor Paul Oyer from Standard University shared his views on how four key economic ideas remain important even if things are changing over time. By using labour economic concepts, Paul demonstrated the value of cost-benefit analysis, the importance of understanding how equilibrium works, the meaning of thinking on the margin and the implications of limits of markets.

The rest of the day was divided into three sessions that focused on economic analysis, economic teaching and economist as policy advisor. The speakers include: Professor Leo Dobes (Australian National University); Professor Caroline Saunders (Lincoln University); Professor Michael Mintrom (Monash University); Professor Morris Altman (Victoria University of Wellington); Dr Graham Scott (Former Secretary to Treasury) and Dr John Yeabsley (Senior Fellow at NZIER). The corresponding Q&A sessions were facilitated by Kim Hill (Radio NZ) and a commentary on economic teaching was given by Ashleigh Cox (a Master student at University of Waikato).

There were many key messages from the three sessions, some examples include:

- Cost-benefit analysis remains an important economic tool for public policy development.
- There is a need to improve option development practices, especially for high cost investment that is irreversible and involve high degree of risks and uncertainty.
- Good economic advice needs to take a long term view and there are tools available to assist with such thinking.
- Consideration of multi-discipline of thoughts is important to solve complex economic problems. To reach out and understand other disciplines, professional networks and knowledge hubs can play a key role.
- Good advice needs to consider risk and uncertainty. To avoid making misleading advice, a range of estimates would be preferred than point estimates and discussion of caveats and limitations is also important.

It is necessary to retain trust via credibility building, which involves building capability to assist on-going decision-making by a series of governments.

Translation into plain English is crucial to ensure economic findings are properly communicated and understood.

Ex-post assessment plays an important role to help policy and economic professions to learn from past policy successes as well as from policy failure and near-failure.

The feedback of the conference from the attendees has been excellent. There has also been lots of debate and ideas on how to improve the use of economics in public policy advice. The GEN committee is looking forward to seeing you all again next year.

RESEARCH IN PROGRESS...

Continuing our series on the research projects currently underway in Economics Departments and Economics Research Units throughout New Zealand, in this issue we profile the research currently being undertaken by economists at University of Canterbury. The objective of this section is to share information about research interests and ideas before publication or dissemination - each person was invited to provide details only of research that is new or in progress.

Jeremy Clark

Associate Professor, Ph.D. (Cornell)

Jeremy's current research focuses on evaluating the decile funding formula used for New Zealand schools, and the effects of rising house prices on family size/fertility using Canadian longitudinal data. He also has a research interest in modifying micro finance lending schemes with joint group liability so as to better serve higher risk business start-ups in developing countries. Jeremy uses applied micro-econometrics and lab experiments for his research. He currently serves as Head of the Department of Economics and Finance at Canterbury.

Laura Meriluoto

Senior Lecturer, Ph.D. (Simon Fraser)

Laura's research has been on theoretical industrial organisation and applied microeconomic theory, looking at topics as diverse as communication network pricing, spam control and the fixed-price-offer mechanism in on-line auctions. Laura's current work has a more empirical slant, looking at the trade creation and trade diversion effects of the NZ-China FTA, the safety of New Zealand sex workers, the business of selling sex, and Chinese households' recycling behaviour.

Warwick Anderson

Lecturer, Ph.D. (Canterbury)

Warwick's research interests are in the area of event studies and the associated time series analysis. More broadly, Warwick has ongoing research interests in aspects of financial distress, dividend policy and corporate governance.

Andrea Menclova

Senior Lecturer, Ph.D. (New Hampshire)

Andrea's research interests are in the areas of Health Economics, Public Economics, and Applied Microeconometrics. Her current projects include studies of the economics of childbearing, the socio-economic determinants of health outcomes in New Zealand, and the effects of Health and Safety legislation.

Stephen Hickson

Teaching Fellow, M.A. (Canterbury)

Stephen's research has focused on economics education – in particular assessment and the how different students engage in economics. He is also working with Andrea Menclova and Alan Woodfield on research into health and safety sentencing.

Glenn Boyle

Professor of Finance, Ph.D. (Texas)

Glenn's primary research interests are in topics related to agency problems and incentives, corporate governance, asset pricing, and financial regulation. Some recent examples include projects on the effectiveness of deposit insurance when introduced during a crisis, and on the relationship between stock return predictability and financial sector deregulation. Glenn is also co-chair of the Australia-New Zealand Shadow Financial Regulatory Committee, a director of consulting firm Sapere Research Group, and a lay member of the NZ High Court.

Bob Reed

Professor of Economics, Ph.D. (Northwestern)

Bob currently has three main research interests: (i) REPLICATIONS: He is currently Replication Editor at Public Finance Review. He is working on several replication studies with PhD students, and should have a paper forthcoming soon on "Replications in Economics: A Progress Report", with an accompanying website. (ii) META-ANALYSES: Bob is working on three different meta-analyses, "FDI and Chinese Economic Growth," "Taxes and Economic Growth in US States", and "A Cross-Country Study of Taxes and Economic Growth". He also has a research line that studies the econometric properties of various meta-analysis estimators. (iii) APPLIED ECONOMETRICS: Bob has several projects that use Monte Carlo simulation to analyse the finite-sample behaviours of (i) panel data estimators, (ii) unit root tests, and (iii) models with lagged dependent variables. In addition, he has a number of active research collaborations with scholars at Chinese universities.

Philip Gunby

Senior Lecturer, Ph.D. (Western Ontario)

Philip's primary research interests are in topics related to the economics of education, occupational health and safety, and technological change. His current projects include how people process information about uncertain situations, and the determinants of the size of the Chinese government. He also has an ongoing interest in studying school choice decisions, particularly information schools give to parents, educational outcomes of parent and student choices, the impact of workplace health and safety laws, and learning from technological disasters.

Richard Watt

Associate Professor, Ph.D. (Madrid)

Richard's research is centred on applied microeconomic theory. The principal areas of application that he is researching are the economics of risk bearing (in particular, risk preferences, downside risk aversion, and the economics of insurance) and the economics of copyright (most recently, optimal/efficient pricing of copyrights, and contracts for access to copyrights under asymmetric information). He is also researching on the topic of optimal management of academic journals using a two-sided market perspective, and recently has been involved in experimental research concerning insurance fraud.

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The New Zealand Association of Economists aims to promote research, collaboration and discussion among professional economists in New Zealand. Membership is open to those with a background or interest in economics or commerce or business or management, and who share the objectives of the Association. Members automatically receive copies of New Zealand Economic Papers, Association newsletters, as well as benefiting from discounted fees for Association events such as conferences.

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The screenshot to the left shows a contour plot of a log-likelihood function for a GARCH(1,1) model fitted to a typical equity return series.

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