A Symmetric information

ISSUE NO. 68   **August 2020**

A newsletter to promote the exchange of information, news and ideas among members of the New Zealand Association of Economists (Inc).

CONTENTS

EDITORIAL

John Yeabsley (john.yeabsley@nzier.org.nz)

As mentioned in the last editorial even the complex, finely tuned machinery that produces the editions of *Asymmetric Information* were affected the onset of measures to contain COVID-19. While this edition is hopefully the last to be impacted – only a month or so late - the content reflects some of the zeitgeist.

The long interview in this issue is with Prof Paul Dalziel of Lincoln University and the AERU. He is interviewed by Peter Tait a colleague.

The Grant Scobie 2 B RED column is one to pick up the mood of the moment. He suggests readings in previous pandemics and in his usual way weaves in his own memories and occasionally strong comments.

The article this time from Stats NZ is one we have been working to commission as the topic is of interest to all users of the census. It discusses the methods employed to overcome some of the issues with the field collection of data.

The short interview consists of the musings of an economist who has used his professional skills in a unusual way to live an unusual life Brendan Moyle of Massey University.

Economics teaching practices locally are examined in a piece by the Waikato trio Michael Cameron, Stephen Lim and Portia Thompson. They have interesting and rather surprising things to say about the topic.

Paul Walker's Blogwatch salutes another giant of the profession who has fallen and then picks up the pandemic theme. But do not fear his usual contrarianism returns in a series correcting what you thought you knew about the Industrial Revolution.

And speaking of giants who have fallen, Diane Owenga contributes an obit for a local economist who had a great influence on both policy and the people who made it – Jas MacKenzie.

This issue's Research in Progress comes from Otago University and a few members who recently joined NZAE are also recorded.

We include an announcement about the WAEI Conference.

Our advertisement on the back page continues to be from Survey Design and Analysis Services. They are the authorised Australia and New Zealand distributors for Stata and other software. www.surveydesign.com.au.

AN INTERVIEW WITH PAUL DALZIEL
by Peter Tait

Q: How did you come to economics?

A: I often say I became an economist when my grandfather was made redundant in 1933 at the height of the Great Depression, the same year my father was born. Unemployed for six years, the impact was felt over three generations in my family. I arrived at the University of Canterbury wanting to be an accountant. At the start of my third year, Frank Tay (Head of Economics) explained to me what economists do to promote the common good, and I was hooked.

Q: Where did it fit into your education?

A: I dropped accounting, and did every economics course available. I then enrolled in the Master's programme of 1981. There were about a dozen of us in the class. It was an intense year, but I loved it. Then I enrolled for a PhD under Richard Manning.

Q: What was the most important/ memorable part of your economics education?

A: The Master's macroeconomics class was memorable! Ewen McCann taught this. I was centre-left, Ewen was centre-right, and we clashed on just about everything. Ewen taught me the passion of engaged political economy.

Q: What people influenced you during this time?

A: There were superstars on the staff and as visitors at Canterbury. Richard Manning, Leslie Young, Bob Clower, John Riley, Ted Bergstrom, Nanak Kakwani and others. Ken Henry, who became Secretary of the Australian Treasury, was a fellow PhD student.

GETTING GOING

Q: What was your first professional economics employment – how did it come about?

A: I started as Assistant Lecturer at the University of Otago in 1984, just as the economic reforms began. The huge jump in unemployment took me back to my grandfather's experience. I hated it being done in the name of economic necessity, and so my career began to take the shape it did.

Q: Looking at that area of work what do you think is important about it?

A: My first Head of Department was Michael Cooper, who was a health economist and chair of the Otago Area Health Board. It is impossible to do good health economics without thinking about wellbeing, and this was where I began my own journey in wellbeing economics.

Q: Thinking back – what would you do differently now in that role?

A: To be honest, not much. I remain convinced that economic policy must pay attention to the lived experience of people, which took me away from the mainstream at that time. I was greatly influenced by Marilyn Waring's 1988 book *Counting for Nothing*, and knew that GDP growth was not enough.

Q: What was the path you followed from that?

A: My career has been entirely as an academic economist at the three South Island universities. I had two sabbaticals with Geoff Harcourt at Cambridge University. Since 2002, I have been Professor of Economics at Lincoln University, where I work in the Agribusiness and Economics Research Unit (AERU) as Deputy to Caroline Saunders.

SPECIFIC JOBS AND ROLES

Q: Do you prefer researching to teaching?

A: Lincoln University has given me awards for research and for teaching, and last year for my work as critic and conscience of society. I enjoy all three, but research is the heart of everything.

Q: What influence did your current role have on you?

A: The AERU mission is to exercise leadership in research on sustainable wellbeing. In 2018, we published a Palgrave MacMillan book on wellbeing economics that already has 55,000 chapter downloads. It was a rich experience to synthesise my ideas like that, and to have them well received by a global audience.

Q: Has NZ's economic history played a part in your ideas?

A: Absolutely. I keep saying that our book could have been written only in New Zealand. A huge part of this is the nation's bi-cultural conversation that has forced us to think about what wellbeing means to different communities.

Q: How do you think your thinking was affected by the economic shifts of the 1980s?

A: Profoundly. The market economy is hugely important for wellbeing and is therefore at the centre of my wellbeing work. But public policy has a distinctive role in shaping economic activities, which is therefore an essential part of wellbeing economics.

INCIDENTS AND IMPLICATIONS

Q: What aspects of work have you found the most satisfying?

A: My career in economics has delivered everything Frank Tay promised. Good economics is unrivalled for expanding

people's capabilities to lead valued lives. Thus I particularly enjoy my engagement with industry, policy and community leaders, helping them find solutions that empower greater prosperity and wellbeing.

OVERALL

Q: Looking back, where did the economics background and training fit into your career?

A: My whole career has been devoted to wellbeing economics; it is core to who I am.

Q: Any final thoughts?

A: Thank you, Frank Tay![1]

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1   For those looking for more about him, see the interview with Frank Tay in Asymmetric Information No 67.

Western Economic Association International

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KEYNOTE ADDRESS

Ester Duflo Abdul Latif Jameel Professor of Poverty Alleviation and Development Economics at MIT and a co-founder and co-director of the Abdul Latif Jameel Poverty Action Lab (J-PAL)

KEYNOTE ROUNDTABLE DISCUSSION – *Economic Policy and the Pandemic*

Christina Romer WEAI President 2021-2022
Class of 1957 - Garff B. Wilson Professor of Economics at the University of California, Berkeley

Janet Yellen WEAI President 2003-2004
Distinguished Fellow in Residence with the Economic Studies Program at the Brookings Institution

Janet Currie WEAI Presidential Nominee 2023-2024
Henry Putnam Professor of Economics and Public Affairs at Princeton University
and the Co-director of Princeton's Center for Health and Wellbeing

Alan Auerbach WEAI President 2020-2021
Robert D. Burch Professor of Economics and Law, and Director, Robert D. Burch Center
for Tax Policy and Public Finance, University of California, Berkeley

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JAS MCKENZIE – ACCOMPLISHED PUBLIC ECONOMIST

An Obituary by Diane Owenga

Photo courtesy of Lincoln University

Colin James (Jas) McKenzie, born in Wellington on 5 March 1939, was the fourth child of Presbyterian Minister Jack and his wife Kate McKenzie. Jas spent most of his childhood in Dunedin, and attended Otago Boys' High School.

Initially considering a degree in medicine, Jas rethought that during a gap year working on a Central Otago farm. He started a Bachelor of Agricultural Science degree at Canterbury Agricultural College (Lincoln) in 1958, completing it in 1961 (and was also Student Association President that year). Jas then enrolled for a master's degree, supervised by prominent public economist, Professor Bryan Philpott - the Director of the Agricultural Economics Research Unit (AERU). Jas combined study with research for the AERU and lecturing. In Brian Easton's words: "In the 1960s Bryan Philpott produced a galaxy of young economists thoroughly grounded in economic theory and well trained in empirical methods; Jas was the brightest star."

Jas's thesis was on wool prices and on joining the Treasury's Land Use Division in 1966, he found his knowledge in demand – wool prices slumped and the fibre's future appeared bleak. He updated the work of the Agricultural Production Council aimed at boosting farm production. He helped establish the first serious economic forecasting unit within the Internal Economics Division, in the early 1970s. There he further honed of his skills in forecasting and macroeconomic policy.

In 1974 Jas returned to lecturing – at Auckland University – mainly in macroeconomics and international trade. After his return to Treasury in 1976, as divisional director of Internal Economics, Jas had a rapid series of promotions. The 41 year old became Deputy Secretary of the Treasury in 1981. In this role, Jas oversaw major developments in economic policy. These included the move away from import licensing and special cost subsidies for agriculture towards more even-handed policies such as altering the exchange rate to encourage efficiencies in earning or saving foreign exchange. He also made valuable contributions to international debates on economic policy, including chairing the OECD's premier Working Party 1 on macroeconomic and structural policy issues in 1982.

Jas made a significant career shift in 1986, when appointed as the Secretary (later renamed Chief Executive) of the Department of Labour – a role he held for 8 years. The Department employed over 2000 staff, distributed around New Zealand, providing a diverse range of public services to aspects of the labour market – a function which was seen as 'ticking over.' The Department was also responsible for providing policy advice on all aspects of the labour market – the area where Jas was expected to make an impact.

This didn't last. Organisationally, Jas took stock of the existing regional structure of the Department (where District Superintendents, mostly ex-factory inspectors, wielded much of the power) in a 'field trip.' He was shocked and wanted better service for the public and more consistency with national policy. In 1987/88 he significantly reorganised the Department's structure, moving away from the 'regional offices that do everything' model to one with distinct national lines of service delivery – each with a clear focus (the Employment Service, the Immigration Service, the Occupational Health and Safety Service, the Industrial Relations Service, the Community Employment Service). To back this up he modernised the support for the Secretary, in particular, by establishing a Māori Perspective Unit under Parekura Horomia to redress what he saw as lacking in the agency and its services.

On the policy front: by the late 1980s the Lange/Douglas government's major economic reforms (including removing agricultural subsidies, floating the exchange rate, corporatising many public enterprises etc.) were having severe labour market consequences. The government learnt the hard way that economic adjustment (as people lose one job and find another) takes far longer in practice than in neoclassical theory – with unemployment soaring to rates not seen in New Zealand since the Great Depression of the 1930s.

An important contribution of Jas's was helping convince the Labour Government (and the following National Government) to focus on tackling rather than ignoring the significant social and economic costs of high unemployment. As a public economist with a strong empirical bent, Jas established the Labour Market Analysis Unit (the forerunner of the well-regarded Labour Market Policy Group) to ensure that the Department of Labour could provide robust evidence-based policy advice on tackling unemployment and other labour market issues. Their documentation of how much harder it is for the long-term unemployed to return to work led Jas to insist that the Employment Service have a much stronger focus on assisting the many thousands unemployed for six months or more.

As a highly professional public servant, Jas not only delivered free and frank advice to Ministers, but also ensured their decisions were implemented effectively (whether they accepted his advice or not.) As Secretary of Labour he got to do just that with the major industrial relations reforms of the Employment Contracts Act, the points system for immigration, the establishment of the National Qualifications System, and many others.

Public economics involves studying government policy through the lens of economic efficiency and equity – building on the theory of welfare economics as a tool to improve social wellbeing. As his career demonstrates, Jas McKenzie was an extremely accomplished public economist.

THE FIVE-MINUTE INTERVIEW WITH …
BRENDAN MOYLE

Perhaps oddly for an economist, I never decided I wanted a career in economics. Mostly I wanted to work with wildlife. And more specifically, wildlife conservation. My first two degrees were actually in Zoology. But this path made me aware that most of the wildlife problems I was confronting were economic in nature. Habitat loss is driven by economics. Over-harvest, including poaching, was driven by economics. To be a good conservationist meant I had to be a good economist.

And in that sense I got lucky. Waikato University was willing to gamble on making me an economist. Frank Scrimgeour and Grant Scobie were my academic supervisors and through that roller-coaster of the PhD. Later at an NZAE conference I got the Jan Whitwell Prize and Rolf Cremer was one of the judges. Rolf was head of economics at Massey at the time. This seemed to lead a path to Massey, which had a solid reputation in the field of natural resource economics.

While at Massey I got deeper into the world of applying economics to wildlife problems. This is not straightforward because unlike say, agricultural systems - or even fishing systems - very little data is collected on wildlife. As much as I'd like to download statistics from appropriate databases, this is impossible. It requires a lot of field work instead.

The first species I really got into were crocodilians and especially the estuarine crocodile from Australia and Papua New Guinea. As this is the largest extant crocodilian on the planet and regards livestock and people as delicious, its conservation has not been straightforward. Pretty much legal trade of the skins to make it worth a lot of money has been the key to its success.

This led to involvement in China on more of the legal and illegal wildlife trade. I got invited to China in early 2007 to work on tigers, and after about a year of getting drunk with officials was able to start research in 2008. By 2009 I'd published roughly the first and only paper on the economics of the illegal trade in China on tiger parts. It conflicted with what a lot of NGO's were saying, which has set up an enduring difficult relationship with many of them since.

The good thing about this kind of research, which is necessarily *in situ*, is being able to use the zoology-side of things. Fake wildlife parts are common in all markets I've researched. So being able to spot that the tiger-bone in a market really comes from a cow is handy.

After tigers it was then on to ivory and elephant ivory. I was pleased that my research produced evidence for elephant ivory being used as an investment good, rather being fed into the market for carvings. This was accepted by the UNODC in their first illegal wildlife trade report as well, and even some NGOs have reluctantly come around to the idea. Sadly, it did not discourage a lot of governments destroying their stockpiles of ivory to send a signal to the bad guys that poaching was bad. Making ivory scarcer would seem to benefit black-market investors by making their tusks even more valuable.

Then it has been on to looking at the black bear bile markets in China. Black bear bile has useful pharmaceutical properties but the farming of bears in China is not popular among many NGOs. On the other hand, the legal supply of bear bile could be limiting poaching and helping wild populations. As one of the few foreign researchers that is trusted enough in China to work on sensitive wildlife topics, I was pulled into that study as well.

By 2018-19 I'd started branching out to Southern Africa and rhino horn markets. In late 2019 I got to be an honorary South African for the CITES CoP in Geneva. Then Covid19 happened.

It is an incredibly interesting world. I've met criminals, under-cover police agents, various locals of different kinds and gone out on a limb to places I never expected. There are places and wildlife I've seen I never imagined I'd get the chance to see. And it really was nothing like you might imagine economics involves as an undergraduate.

It has a dark side. One of the locals involved in a project in Papua New Guinea was murdered in the Landcruiser we used. A colleague of mine - Esmond Martin- who also investigated ivory black markets was murdered in early 2018. I hadn't seen him since 2016, when we sat at the Ol Pejta reserve in Kenya, talking ivory. John Thorbjarnarson who worked brilliantly on crocodiles died suddenly in 2010 from malaria. He used to turn up to meetings in bright Hawaiian shirts. Annoying Asian criminals or working in places with tropical diseases, insurrectionists, bandits and the like has some risks not normally associated with academic economics.

I like to take photos. After time in Asia, I like to disappear into NZ wilderness. Take photos. Decompress and immerse myself in nature. Or bike. Eating up the km on spinning road-bike wheels. Just to move, feel the wind and sun and even the rain.

WHAT DO WE KNOW ABOUT THE QUALITY OF STATISTICS PRODUCED FROM A COMBINATION OF SOURCES? THE CASE OF THE NEW ZEALAND 2018 CENSUS

By Christine Bycroft, Stats NZ

Official population statistics

Demographics are fundamental to understanding just about everything - from providing a rich picture of the society we live in, to economics, environmental impacts and helping explain Covid-19 fatality rates. Population statistics in New Zealand have always been produced from multiple sources. The official 'estimated resident population' (ERP) figures are based on the census and updated in between censuses for population change based on administrative sources: birth and death registrations and external migration flows estimated from border crossing data. The census resets population statistics every 5 years.

The census itself is subject to error, as people can be missed or counted more than once. Census coverage is measured through the Post-enumeration survey and the ERP adjusted for census net undercount. Most of the uncertainty for the ERP in the base census year has been due to the sample error of the census coverage adjustment, as well as some statistical imputation of age, sex and ethnicity variables. Estimates of uncertainty were first produced in 2013 for the new ERP based on the 2013 Census. Most of the uncertainty in between censuses is due to the external migration component, as well as migration within New Zealand. To date no methods have been developed to measure the error in the ERP following the base census year.

Census 2018

Considerable change was introduced for the New Zealand census in 2018. For the first time, administrative records were used to count people who were missed by the census field collection, replacing the use of unit imputation (in previous censuses 'substitute' records were added to the census where there was sufficient evidence that a person had been missed). Overall, 89 percent of the 2018 Census dataset comes from responses to the census field collection, and 11 percent from 'admin enumerations'. Response rates in 2018 were lower than expected, and those missed by the census field collection were disproportionately Maori, Pacific and young adults – populations that are typically more likely to be missed by the census. Almost a quarter of Maori and Pacific people in the 2018 Census have been counted through admin enumerations.

The use of administrative records has clear advantages over an imputation process. We know these are real people (they must be in at least one of: New Zealand birth registrations, tax registrations, and visa applications, all data sources with high integrity); and other census information about them can be obtained through the administrative sources linked in the IDI. It is clear that administrative data does include many people who are typically hard to count in a census field collection.

We had two main issues regarding the quality of a census produced from combined census responses and administrative sources. This approach is rare internationally and was not originally planned for the 2018 Census. Our first challenge was as we developed the methods - how did we know that the admin records we were introducing into the census file were improving the census dataset? The second is the standard question for any census: what is the coverage of the final census dataset, and what does this mean for the quality of the ERP.

Administrative data

We already had considerable experience with a New Zealand resident population derived from admin data and understood its strengths and quality limitations. We know that the admin resident population includes some under-coverage and some over-coverage, but levels have not yet been quantified. The other main concern is the accuracy of location data obtained from administrative addresses. The admin enumerations were selected from this admin population and are only added to the census dataset if they were in New Zealand on census night and have not already responded to the census.

The admin enumeration methodology was designed to achieve a final census dataset with good coverage of the census target population. We were most concerned with eliminating potential over-coverage due to the use of admin records, both nationally, and for local areas, and expected that this would result in some remaining under-coverage. Probabilistic linkage processes were designed to ensure that admin records are added only for people who have not already responded to the census, with an adjustment made for linkage errors. Statistical methods were developed to manage the known

quality limitations of the admin resident population. Small area information is at the heart of the census, and while the quality of admin addresses is good for larger geographies, accuracy decreases for smaller areas, and deriving administrative households is problematic. To manage these issues, statistical models were developed to predict how reliable the admin data are for representing an entire missed household. Where we could not confidently place eligible administrative records in a household, they were placed in the smallest geographic area (meshblocks). A model similar to that used for inclusion of households was applied, predicting the likelihood that the admin meshblock reflects a person's true usual residence meshblock, and people with scores greater than a cut-off were included in the census dataset.

Dual system estimation

While each step used standard statistical methods to determine which administrative records were added to the census dataset, we needed to assess the combined result. We did not have an estimate of the true population in March 2018 that was free of error (since that is what the census is designed to achieve). To overcome this, we developed a new population estimate for census day by combining the received 2018 census responses and the admin resident population using dual system estimation. Dual system estimation (DSE) combines two partial lists of a target population to estimate the total population. (The same approach is used to estimate census undercount based on the coverage survey, but different adjustments were needed to meet certain assumptions). This 'DSE' provided an interim benchmark population against which to compare the combined census dataset. Comparisons showed that net undercount for the 2018 census dataset was lower than for 2013, across all the main demographic breakdowns. Age distributions nationally and for Maori, Pacific and Asian ethnic groups closely followed the benchmark populations, although with some undercount for younger adults, as had been typical in previous censuses. Undercount across territorial authorities was generally lower and less variable than in the 2013 Census. Due to limitations of the estimation method, the DSE was not able to provide more granular estimates for smaller geographies or for other ethnic groups.

The DSE comparison provides estimates of bias in the census dataset, but does not give any estimate of uncertainty due to the use of admin enumerations (or indeed due to errors in census responses). Stats NZ enlisted the help of contractors to test the sensitivity of the parameters being used to decide which administrative records were included in the census file. This was particularly important for electoral boundary setting which is based on census meshblock counts. They found that electorate boundaries drawn using census counts are likely to be the same, regardless of reasonable choice of threshold, and that the 2018 Census is robust for the purpose of determining electoral boundaries and representation.

A fully coherent theoretical methodology extending the dual system estimation approach combining census responses and administrative records within a Bayesian framework has been developed. This approach also adjusts for records missed by both sources and provides estimates of uncertainty. However, this is an ambitious project, and has not yet been fully implemented due to the complexity of the models and the long run times.

The 2018 ERP

As in previous censuses, official measures of coverage of the 2018 Census dataset will be based on the Post-enumeration survey and fed into the new 2018 based official ERP. A measure of the uncertainty of the ERP will be derived as part of this process. The main implication of the use of admin enumerations instead of unit imputation has been some changes to the planned coverage estimation methodology.

The 2018 Census is no longer simply a 'traditional' full field enumeration census, but a 'combined' census that uses administrative records for people who were missed by the field collection. This new combined census model counts people more accurately, providing more information especially for those who are hardest to count through field collection. The combined census model is more complex and relies on safe access to linked administrative data, and statistical methods to account for quality limitations of the administrative sources. Final measures of census coverage are still expected to be achieved through a coverage survey as in the past, but with some changes to methodology. More complex methods that would provide population estimates and uncertainty measures that encompass all the model uncertainties are still some way off.

Further reading:

Bryant J, Dunstan K, Graham P, Matheson-Dunning N, Shrosbree E, and Speirs R (2016). Measuring uncertainty in the 2013-base estimated resident population (Statistics New Zealand Working Paper No 16-04). Retrieved from www.stats.govt.nz.

Stats NZ (2018) Experimental population estimates from linked administrative data Retrieved from www.stats.govt.nz.

Stats NZ (2019). Overview of statistical methods for adding admin records to the 2018 Census dataset. Retrieved from www.stats.govt.nz.

Stats NZ (2019). Predicting the quality of admin location information for use in the 2018 Census. Retrieved from www.stats.govt.nz.

Stats NZ (2019). Electoral boundaries sensitivity analysis of 2018 Census data. Retrieved from www.stats.govt.nz.

ECONOMICS TEACHING IN NEW ZEALAND: EMPHASISING KEY BUSINESS APPLICATIONS

By Michael Cameron, Steven Lim and Portia Thompson[1]

The Problem

As teachers of introductory economics, our aim is to improve the economics knowledge of our students - but this is not always an easy task. The range of topics that we could offer to students has increased over time, forcing us to make difficult decisions about what should be taught and what should be omitted. The addition of new and exciting topics such as behavioural economics, experimental economics, and recent developments in financial economics and macroeconomics (not to mention other subfields), only exacerbates this challenge. As a result of these new developments, introductory economics courses have evolved rapidly in recent years. As Bowles and Carlin (2020) suggest, the content of economics courses has responded to new challenges that students are likely to face, including rising economic inequalities, climate change, financial instability, and the future of work. In addressing such issues, the range of tools has correspondingly widened, so that students also get a grasp of strategic interactions, limited information, behavioural foundations, and sometimes even dynamic processes.

Nevertheless, in expanding course content with new topics and concepts, the commonly-used textbooks and online learning courses have tended to compromise on depth, detail and applications. This seriously limits the extent to which our students can use economic concepts and models to understand the real world by the end of a 100-level university economics course.

Nevertheless, the logical, structured thinking process of economics principles taught in University can apply directly to real world scenarios. Concepts such as supply and demand, barriers to entry and diminishing marginal returns, are just some of the ideas that lend themselves to making intuitive economic decisions in a range of contexts. However, traditional economics textbooks often do not communicate this effectively, focusing instead on highly theoretical and sometimes outdated examples, and this approach limits the ability of students to recognize the applicable nature of their course content to their personal potential and wealth creation.

Emphasising Business Applications

We suggest that there is much that can be done to refocus and modify the content taught in introductory courses, at least in New Zealand (Cameron and Lim, 2015). Our primary audience is first-year undergraduates, often studying economics as a compulsory component of a business degree. Some students will progress to an economics major, but the majority will not. Hence, the 100-level course(s) are likely to be many students' first and last opportunity to connect with university-level economics. Such students are likely to leave substantially under-prepared for real-world business. It's not that we don't have enough time to prepare them better; it's that we tend to forsake depth of knowledge for breadth of content.

Transitioning from studying economics at university to working as graduates in a range of roles allows students to recognize that many economic principles transfer across fields, disciplines, and industries. The most intuitive concepts fall into two broad categories: those that were reinforced year-on-year (such as diminishing returns, supply and demand, and market conditions) and those that were taught with a focus on providing many practical examples.

While 100-level economics textbooks adequately explain market analysis and the theoretical application of graphing such analysis, they typically fail to present this analysis as a tool that can be used *in practice*. Our proposed solution is to augment the economics syllabus by focusing on key business applications and examples that could be pivotal in students achieving business success, either soon after they have completed the 100-level course or relatively early in their careers. We believe that this adds much value to students, and importantly for students who will not continue to major in economics, while requiring little additional class time.

To clarify our point, we offer a couple of brief illustrations of how focusing on key business implications of economic theory can open profitable doors for business students. This does not require rewriting a course, but simply incorporating data and events that are readily observed in the real business world into a few existing core topics, to help students to see the theory and business events in a novel and practical way.

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Example 1

SUPPLY AND DEMAND, LIMITED INFORMATION, AND WEALTH IMPLICATIONS

Supply and demand curves are very useful foundations for thinking about markets. Students can use the curves to predict impacts on prices and quantities through comparative statics. Notably though, as prices and quantities change, so does the wealth of people who hold assets in the market that has been disturbed. In New Zealand, recent household wealth changes have been dramatic, tied closely as they are to rising house prices. Yet the students that we have taught have overwhelmingly failed to recognise these wealth changes. Even as recently as four years ago, not one of our students in a class of almost 100 students knew that NZ ranked top or close to top in the global rankings of average wealth per adult (e.g., see Credit Suisse Research Institute, 2015). This is a glaring omission, since the students already had the supply and demand tools necessary to analyse and predict house price impacts.

Despite the substantial opportunities for income and wealth generation in the housing market, textbooks deal very little with this. Yet it only takes a few minutes of class time to move from supply-and-demand/perfectly competitive firms to helping students analyse and exploit potential market opportunities. For example, when linking supply and demand (or market) equilibrium to the equilibrium of a perfectly competitive firm, we typically show students how a rightward shift of the market demand curve lifts the price and thus the short-run profits of the firm. Over time, though, the profits are eroded through entry into the industry, such that each firm makes only normal profit in the long-run as prices and costs adjust. Applying these basic economic insights (albeit approximately) to the property markets of small town New Zealand can identify profit opportunities that students might realise even while still at university.

Over the last decade or so, we've used a challenging and practical exercise for students, where they list the determinants of supply and demand in the residential housing market, identify the direction of shifts in demand and supply curves as the determinants change, and estimate the relative magnitudes to the shifts. Students are then asked to predict the overall impact on house prices and the prospect for capital gains in the forecast period.

We link the exercise to the concept of limited information, explaining how this can lead to unexploited market opportunities. For instance, around eight years ago the annual rental return from housing in a town like Murupara was approximately 33% (prices for rental houses were as low as $20,000, but annual rent could be $6,000+).

This implied a house price to annual rent ratio of around three, while Auckland historically exhibited a ratio of about 28. As information spread about the returns, investors bought in Murupara, such that by around three years ago the rental return had fallen to 16%. A year later it was around 12%. With rents relatively stable, the market adjustment fell heavily on house prices, which rose steeply and doubled in just a few years. Students eight or so years ago could buy a house in Murupara with a deposit of as little as $4,000 – some of our students had five or more houses, realising high returns from rent and substantial capital gains over time. After learning how to use supply and demand curves in the housing market, how the spread of information would attract entry into a market, and how prices were likely to adjust, up to 20% of students in our smaller classes (where we delved into greater detail about the risks) bought property.

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BEATING THE ODDS IN MONOPOLISTIC COMPETITION (HIT-AND-RUN)

Some students may see setting up or investing in a business early in their careers as an option, and most small business markets are monopolistically competitive. However, textbook treatments of monopolistic competition have tended to change very little over the years, despite the overwhelming prevalence of monopolistically competitive market structures in modern mixed economies. The main idea is that supernormal profits can be made in the short-run, when the firm differentiates its product, and advertising for example is used as a strategic option. Still, zero profits must hold in the long-run as the result of competitors entering the market, where the demand faced by each firm falls until price equates with average cost.

But instead of a monopolistically competitive firm selling a product, how about if the firm is focused on selling the business itself? Our observations of and interviews with hot roast shop owners reveal an innovative way to cope with the problem of the competitive erosion of supernormal profits - sell the business over and over. That is, the owner sets up a new hot roast shop in say autumn, works very hard, and over the autumn/winter does a good trade. With short-run supernormal profits on the books, the owner on-sells the business for a further profit, moves to another town, and starts again. As long as the owner can maintain this hit-and-run strategy, they just keep moving through a series of persistent short-run supernormal profits. Students can also identify that a similar strategy of profit-by-acquisition is often used by small technology firms as well.

Conclusion

Current economics teaching, at least as reflected in mainstream 100-level textbooks and online materials, is strong on principles and basic theory. The CORE textbook, advocated for by Bowles and Carlin (2020), includes a focus on 'big issues' such as inequality and climate change. However, those are not the only issues that can excite students in introductory economics, particularly business students. Instead, business students may become more engaged by seeing the possibility of identifying profitable business opportunities using their newly-developing skills in economics.

Some of the opportunities can be pursued at a relatively low financial cost. For example, the very low barriers to providing content due to social media and the Internet can offer fairly lucrative business paths for students. Recent years have seen huge adjustments in market power, as media giants shut down and social media influencers are able to make six-figure incomes from producing marketing content. Some New Zealand influencers earn $40k-50k annually on a retainer for a single brand, providing a guaranteed income regardless of the performance of their affiliation code. The ability to compete globally makes it even more important for young people to choose a niche appropriately.

The basics of economics, as included in mainstream textbooks, are potentially helpful for understanding how businesses operate (or fail to operate) efficiently, but the textbooks tend to be very weak in helping students to anticipate or evaluate profit opportunities. When economists wryly claim that there are no $20 bills lying on the footpath, they may be unintentionally discouraging students from looking for or discovering profitable activities. In other words, they discourage innovative business strategies. Yet innovative strategies, like hit-and-run, are readily incorporated into mainstream content. And by seeing how they can make money through profitable investments (such as in housing markets in less well-known regions), even at a relatively young age, we hope to motivate students better and to give them the confidence to undertake business activities.

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FROM THE 2B RED FILE

by Grant M. Scobie (grantmscobie@gmail.com)

It would seem inconceivable that the 2B RED file could start this issue without giving some attention to pandemics, and Covid-19 in particular. There is already a mass of material that has been published. Some of it is accurate and insightful; sadly much seemed to have been rushed out and is decidedly flaky. Only a select few seem to get both the epidemiology and the economics right. In fact, it was rather amazing the speed at which economists were analysing, or at least pontificating. The National Bureau of Economic Research would be a safe place to start for those wanting more solid recent papers. A good example would be **Oliver Coibion, Yuriy Gorodnichenko and Michael Weber (2020) The Cost of the Covid-19 Crisis: Lockdowns, Macroeconomic Expectations, and Consumer Spending NBER: Working Paper No. 27141).**

In the next few years there will be thousands of papers published, hundreds of books written, and endless PhD theses churned out. With daily data on cases confirmed, tests conducted, hospital admissions, reported deaths and (thankfully) numbers of survivors from 120 odd countries, there will be a rich data set, not unlike those reporting stock market data. In short there will be longitudinal panel data to gladden the hearts and populate the models of the entire econometric world.

But your correspondent has made a deliberate choice; we will be patient and wait for some solid, rigorous public policy analyses of the current pandemic. Instead we will look back; there is no shortage of historical evidence of pandemics. Naturally, the plague that decimated Europe always springs to mind. And your 2B RED column covered that last year - could we say prophetic? Recall **John Kelly (2006) The Great Mortality: An intimate history of the Black Death (London: Harper-Collins).**

The recent coronavirus was my second lockdown. There may be just a few readers who remember the 1947 polio epidemic in New Zealand. I was at primary school and have vivid memories of the hand washing and the lockdown. Schools were closed for almost 5 months, and we had lessons "on line" (on the radio). Deaths numbered 70, from a much smaller population than today. So, in many ways it was much more dramatic than Covid-19. However economic activity was much less impacted than our current experience, and there were no border controls as far as I am aware. We were still exporting butter and fatty mutton to Britain.

But the parallels with our current crisis were manifold. The politics, the public health issues, the possible cures (mostly ineffectual), the criticisms of the Health Department, the closure of schools, the loss of schooling and concerns for exam preparation, the inconsistencies in the policies (picture theatres were closed but not eating houses), the medical debates about community transmission and the possible benefits of allowing mingling of children to build immunity - in short, a very mirror of today's issues.

Readers who might be interested in more details of the 1947-49 pandemic should refer to **Jean C. Ross (1993) A history of poliomyelitis in New Zealand.** A thesis submitted in fulfilment of the requirements for the Degree of Master of Arts in History University of Canterbury. Available on line at https://core.ac.uk/reader/35467802

There are no grounds for complacency. Since 2000, there have been 75 outbreaks of viral diseases around the world, killing close to a million people. These are not 1 in a 100 year events. The 1918 flu pandemic was a major event in New Zealand. My mother recounted how her mother spent days at the stove top making soup for needy people. As an aside the word influenza is Italian and came from the medieval Latin, influentia, having first been applied to an epidemic in Italy in 1743.

For a vivid account of the flu pandemic in New Zealand see **Geoffrey Rice (1998) Black November: The 1918 Influenza Pandemic in New Zealand (Canterbury University press: and a 2nd edition, 2005)**

To understand more of the background to the 1918 pandemic I used some time in lockdown to read **Gina Kolata (2001) Flu: The Story of the Great Influenza Pandemic of 1918 and the Search for the Virus that Caused It (New York: Atria Books).** The author is a science writer for the New York Times. This is medical history at its gripping best. She unravels the mystery of the virus and traces the search for the live pathogen from bodies buried in the permafrost of Alaska and Norway.

There is another pandemic of a different type: this one a plague of books whose main purpose seems to be to present yet another damning obituary of economics. I have always felt that a doughnut was a mass of tasteless, sticky carbohydrate built around a hole- i.e. nothing in the centre. Given that view, Kate Raworth could not have chosen a better title for her book **Kate Raworth (2017):"Doughnut Economics: Seven Ways to Think Like a 21st Century Economist (Penguin: Cornerstone Digital).**

The author sets out the well-worn litany of indictments of economists and the profession in general: assumptions underlying **homo economicus** are unrealistic; economic growth causes more harm than good as it fosters unequal distribution of incomes, underpins crises through the greed of selfish actors and damages the environment; and above all it subsumes the well being of individuals on the altar of GDP.

There is nothing new in this list. Like many of her fellow critics of economics, Raworth dedicates her energies to attacking a caricature of 19th century economics with scarcely a hint that the literature is today replete with the political economy of institutions; of well being and living standards as the goals of economic activity; of behavioural economics; of how politics not markets underlay the GFC; of how economic growth lifted a quarter of the world's population out of poverty in the last 30 years; and how property rights and incentives have made a major contribution to environmental outcomes. But the real disappointment of the book is summarised in her own words: "These seven ways of thinking …don't lay out specific policy prescriptions or institutional fixes" (p. 26). The reader is left wondering: "so what was the point?" Which is pretty much how I feel about doughnuts.

BLOGWATCH

By Paul Walker (psw1937@gmail.com)

The great organisational economist Oliver Williamson has died. His passing has been noted by the Haas School of Business at the University of California, Berkeley <https://newsroom.haas.berkeley.edu/nobel-laureate-oliver-williamson-dies-at-87/>. James R. Hagerty writes on "Oliver Williamson, Nobel Economics Winner, Studied Inner Life of Firms" (with a great Pablo Spiller story) <https://www.wsj.com/articles/oliver-williamson-nobel-economics-winner-studied-inner-life-of-firms-11591287975>. Peter Klein writes "A Remembrance of Oliver Williamson" <https://sites.baylor.edu/peter_klein/a-remembrance-of-oliver-williamson/>. David Henderson writes on Williamson at <https://www.econlib.org/oliver-williamson-rip/>. Alex Tabarrok says, "Oliver Williamson, RIP" <https://marginalrevolution.com/marginalrevolution/2020/05/oliver-williamson-rip.html>. Alan Levin writes "Nobel Laureate, Berkeley Economist Oliver Williamson Dies at 87" <https://www.bloomberg.com/news/articles/2020-05-23/nobel-laureate-berkeley-economist-oliver-williamson-dies-at-87>. From Scott E. Masten comes "Oliver E. Williamson: A Personal Appreciation" (pdf) <http://webuser.bus.umich.edu/semasten/papers/ Oliver_Williamson_Appreciation.pdf>. Harrison Smith notes that "Oliver Williamson, Nobel-winning economist who studied organizations, dies at 87" <https://www.washingtonpost.com/local/obituaries/oliver-williamson-nobel-winning-economist-who-studied-organizations-dies-at-87/2020/05/26/1fe627c6-9f5d-11ea-9590-1858a893bd59_story.html>. At the Society for Institutional & Organizational Economics website, they discuss Oliver Williamson's legacy <https://www.sioe.org/williamson-series>.

Given the current situation Rémi Jedwab, Noel Johnson, Mark Koyama raise a troubling idea to do with pandemics and the persecution of minorities in an article, "Pandemics and the persecution of minorities: Evidence from the Black Death". 'The Black Death was accompanied by violence against Europe's Jewish communities. But not all Jewish communities were persecuted. This column outlines two countervailing effects that can help explain this variation: a scapegoating effect – as the disease worsened, there was an incentive to blame the outgroup – and a complementarities effect – Jews performed important roles in the medieval economy and these services became more valuable in the wake of the plague. Together, these effects shed light on the conditions under which prejudice and violence against minorities can be exacerbated or limited' <https://voxeu.org/article/pandemics-and-persecution-minorities>.

Also on the topic of pandemics, Guido Alfani looks at "Pandemics and asymmetric shocks: Lessons from the history of plagues". 'The ultimate effects of the COVID-19 pandemic are impossible to foretell. This column examines major plague episodes from the past millennium to draw lessons for the current crisis. The effects of the 14th century Black Death and 17th century plagues were heterogeneous, depending on multiple epidemiological factors and initial conditions. Some regions recovered quickly, while others suffered prolonged economic damage. Dealing with the asymmetric shocks of COVID-19 and preventing similar economic collapse calls for coordination and collective action by affected countries' <https://voxeu.org/article/pandemics-and-asymmetric-shocks>.

Continuing the pandemic theme, Vincent Geloso discusses "The Long View on Epidemics, Disease and Public Health: Research from Economic History". As we know shutdowns, quarantines, lockdowns and curfews impose economic costs. Yet, from a public health perspective, shutdowns, quarantines, lockdowns and curfews have benefits in that they limit contagion risks and deaths. There is thus a trade-off to be made. Many researchers have tried to measure the costs and benefits of the measures adopted by governments. The idea is to identify which measures are too extreme in that they increase economic distress [i], might induce behavioural responses that mitigate the effectiveness of public health measures [ii] or that are simply too costly compared to other alternatives. However, Geloso argues that these trade-offs may understate the complex web of issues associated with public health measures <https://ehsthelongrun.net/2020/04/18/the-long-view-on-epidemics-disease-and-public-health-research-from-economic-history-part-c/>.

Another column on the pandemic theme is by Kevin Bryan who writes on "The Simple Economics of Social Distancing and the Coronavirus". ' "Social distancing" – reducing the number of daily close contacts individuals have – is being encouraged by policymakers and epidemiologists. Why it works, and why now rather than for other diseases, is often left unstated. Economists have two important contributions here. First, game theoretic models of behavior are great for thinking through where government mandates are needed and where they aren't. Second, economists are used to thinking through tradeoffs, such as the relative cost and benefit of shutting down schools versus the economic consequences of doing so. The most straightforward epidemiological model of infection – the SIR model dating back to the 1920s – is actually quite commonly used in economic models of innovation or information diffusion, so it is one we are often quite familiar with. Let's walk through the simple economics of epidemic policy' <https://afinetheorem.wordpress.com/2020/03/13/the-simple-economics-of-social-distancing-and-the-coronavirus/>.

At the AEA website, Tyler Smith ponders "The road to the Industrial Revolution: How did infrastructure accelerate

economic growth in the UK?" He argues that the literal groundwork—the physical infrastructure—of the Industrial Revolution is vital to understanding when and where it started. Smith is writing about a new paper, "Endogenous Infrastructure Development and Spatial Takeoff in the First Industrial Revolution" by Alex Trew, which appears in the April issue of the *American Economic Journal: Macroeconomics*. Trew modelled the impact that better roads, canals, and railways had on the geography and makeup of the economy of England and Wales from 1710 to 1881. He found that Northern England's more local approach to infrastructure building accelerated its economic boom. At the time infrastructure projects were financed by local businessmen and farmers, usually by selling stock, and not the central government or the financial centres of London. Thus, infrastructure development was concentrated within smaller regions. This turned out to be critical to the North's early growth spurt <https://www.aeaweb.org/research/transportation-industrial-revolution-spatial-uk>.

George Selgin looks at "The New Deal and Recovery" in a series of articles. His plan is to offer several articles covering different aspects of the New Deal and how and why they did or didn't, help to end the Great Depression. 'In the series of posts to follow, I hope to introduce my readers to evidence casting doubt on the view that New Deal programs ended, or mostly ended, the Great Depression. I'll also address here and there some other popular misconceptions (as I see them) about the New Deal. I don't expect to win everyone over to my view of things. I'm not that ambitious. I merely hope to convince you that those who claim the New Deal held up recovery don't deserve to have their opinions dismissed out of hand, or attributed to purblind partisanship'. He begins with an introductory piece <https://www.alt-m.org/2020/06/12/the-new-deal-and-recovery-a-new-alt-m-series/> then Part 1 looks at "The Record" <https://www.alt-m.org/2020/06/16/the-record/>, Part 2 at "Inventing the New Deal" <https://www.alt-m.org/2020/06/22/the-new-deal-and-recovery-part-2-inventing-the-new-deal/> and Part 3 at "The Fiscal Stimulus Myth" <https://www.alt-m.org/2020/06/29/the-new-deal-and-recovery-part-3-the-fiscal-stimulus-myth/>.

In other news, Timothy Taylor discusses how economists and sociologists see racial discrimination and why they see it differently. 'Economists tend to see discrimination as based on actions of individuals, who in turn are interacting in markets and society. However, sociologists do not feel the same compulsion as economists to build their theories on purposeful decision-making by individuals: "Sociologists generally understand racial discrimination as differential treatment on the basis of race that may or may not result from prejudice or animus and may or may not be intentional in nature" ' <https://conversableeconomist.blogspot.com/2020/05/how-economists-and-sociologists-see.html>.

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RESEARCH IN THE DEPARTMENT OF ECONOMICS AT THE UNIVERSITY OF OTAGO

Dr. Neha Agarwal

Neha is an applied microeconomist. Broadly, her research focuses on topics related to labour, health, family and gender in developing countries. Current research interests include the impact of fertility challenges on marriage, the interactive role of cultural norms and economic development on maternal health and the role of male earnings in determining female labour force participation decisions.

Professor Nathan Berg

Professor Berg specializes in behavioural economics. Berg's articles in the field of behavioural economics appear in journals such as Journal of Economic Behavior and Organization, Psychological Review, and Social Choice and Welfare. Berg serves as Associate Editor for Global Economics and Management Review (Elsevier) and is an Associate Editor for Review of Behavioral Economics. He sits on the Editorial Boards of Journal of Behavioral and Experimental Economics (formerly Journal of Socio-Economics) and Global Business and Economics Review. Berg was a Fulbright Scholar in 2003 and Visiting Research Scientist at the Max Planck Institute-Berlin in 2005 and at Osaka University in 2008 and 2009.

Dr. Andrew Coleman

Dr. Coleman currently researches intergenerational economic issues, with a particular focus on New Zealand Superannuation, housing, and taxation. In recent work, he develops dynamic heterogeneous agent models to analyse the relationships between taxes, and urban land markets. His current work is focused on how the tax system affects the way transport infrastructure is capitalised into land values. He also is using the department's 1000Minds software to investigate what New Zealanders want from government pension programmes.

Professor David Fielding

Professor Fielding's research interests are mainly in the areas of development macroeconomics and quantitative political economy. Current interests include the economics of violent conflict in the Middle East, monetary unions in Sub-Saharan Africa, and the volatility of aid to developing countries.

Dr. Murat Genc

Murat is an applied microeconometrician. He teaches microeconomics and econometrics. He has done empirical research in various areas in economics where he estimated gravity models in trade and foreign direct investment, demand systems to estimate food price elasticities, and collaborated in research about the health impacts food taxes and subsidies.

Dr. Peter Gibbard

Peter's research focusses on microeconomic theory as well as microeconometrics. His research interests include behavioural models of decision making, the economics of search, discrete-choice econometrics and competition economics.

Professor Paul Hansen

Paul's research these days is mainly focussed on Health Economics, Multi-Criteria Decision-Making and Conjoint Analysis, with emphasis on priority-setting and resource allocation, especially via his 1000minds software (www.1000minds.com). During his 30-odd year career at the University of Otago, Paul has also been a contractor for Google, an advisor to the WHO, been seconded to Treasury and consulted for PHARMAC and the Ministry of Health. In 2009-10 he served on the High-Cost, Highly-Specialised Medicines Review Panel, which contributed to a major expansion of PHARMAC's roles.

Professor Alfred Haug

Alfred's interests are in time series econometrics and empirical macroeconomics. His recent particular interests are in structural vector-autoregressive modelling, the empirical interaction of fiscal and monetary policies, and the size of fiscal multipliers in various different monetary policy environments. For more information, see his CV at https://www.otago.ac.nz/economics/staff/haug.html.

Dr. Viktoria Kahui

Viktoria's interests are in fisheries economics, but more recently also in environmental and wellbeing economics. Viktoria researches, teaches and supervises students across a range of disciplines and topics, and enjoys collaborating in panels and research projects such as the Living Standard framework in 2018, the Otago's Climate Change Research Network and local native habitat restoration projects.

Associate Professor Alan King

Alan's current research interests primarily relate to the application of time-series modelling techniques (in particular, cointegration and unit-root tests) to a variety of applications. These include: modelling the determinants of international trade flows, testing the income convergence hypothesis, investigating the behaviour of expectations in the presence of an inflation target, and modelling the determinants of carbon emissions.

Professor Stephen Knowles

Stephen's current research interests are focused on the economics of altruism, using both laboratory and field experiments. He has a specific interest in what motivates people to give money to charity. especially international development charities. Some of this work focuses on the question of why more people are not "effective altruists". He also works in the area of development economics, with his current research in this area focused on measuring economic development.

Professor Dorian Owen

Dorian's research interests are mainly in the areas of empirical modelling of economic growth and development, sports economics, and applied econometrics. Current interests include replication and the role of misspecification testing, the role of instrumental variables in analysing the determinants of economic growth and development, applications of machine learning methods, and competitive balance and competition design in sports leagues.

Dr. Arlene Ozanne

Arlene's current research focuses on two main themes: (1) community empowerment, economic growth and resilience and (2) the economics of worker migration. Her research on empowerment investigates how empowering groups of people can help reduce disparities in health outcomes and consequently, help stimulate economic growth, and further examining empirically how migrant communities can become more resilient to natural disasters. Her research on the economics of worker migration centres on examining the pathways, employment and retention mechanisms of overseas-born nurses and careworkers, and how they can be a sustainable source of workers for many developed countries that face labour shortages in the health sector, given the host countries' current migration policies.

Professor Ronald Peeters

Ronald is a theoretical and behavioural/experimental economist, with main interest in game theory (dynamic, behavioural, evolutionary, computational), applications of game theory (such as, industrial organisation, public goods, auctions and contests), and (behavioural) mechanism/market design (in particular related to fundraising and forecasting).

Associate Professor Trent Smith

Trent's research interests are broadly interdisciplinary, applying economic methods in biological perspective to better understand behavioural phenomena that would seem to violate the economist's conventional presumptions of rationality and full information. His published research has focussed in particular on dietary choice, obesity, addiction, economic insecurity, and mass marketing.

Dr. Paul Thorsnes

Dr. Thorsnes' research interests are primarily in the areas of urban and environmental economics and policy. Topics of recent and current research include study of interactions among urban amenities (local public goods) and residential development patterns, estimates of the values of urban amenities using data from house sales and stated choice surveys, and studies of variation in stated and revealed preferences for household energy-efficiency retrofits.

Dr. Murat Ūngōr

Murat's research is mainly focused on the area of international macroeconomics and trade, with an interest in growth and development. His recent work has been centred on the analysis of China's structural transformation and economic growth performance, with a view to a) establishing the role that trade and other liberalisation policies made in this process, and b) assessing the impact that China's development and openness have had on the de-industrialization of the world's mature and developing economies. His current research investigates the quantitative consequences for the structural transformation of employment and output, and for the optimal pattern of trade in goods and services, in a country experiencing productivity driven economic growth which favours some sectors more than others. Prior to joining the University of Otago, Murat was a research economist at the Central Bank of Turkey. He holds a PhD in economics from the University of Southern California.
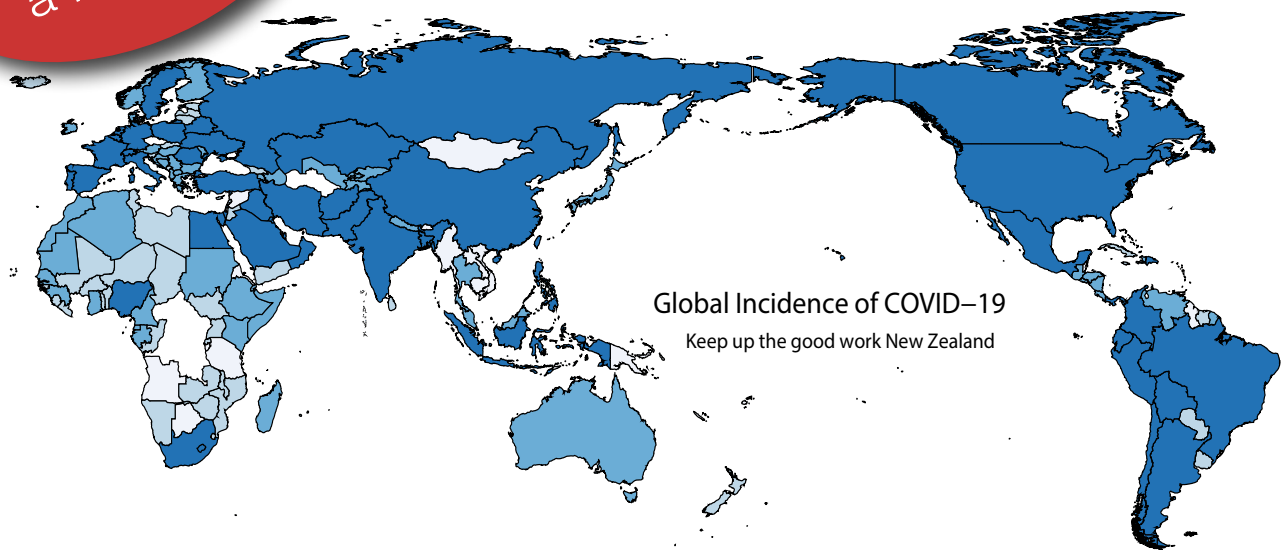
Dr. Dennis Wesselbaum

Dennis is a macroeconomist with both theoretical and empirical interests. His research activity is split between macroeconomic topics and the impacts of climate change. Precisely, his research interests are Macroeconomics (esp. Monetary and Fiscal Policy), Quantitative Economics, Economic Growth, Migration, and, more generally, the interaction between climate, environment, and society. He currently is a guest researcher at the Deutsche Bundesbank and the Editor-in-Chief of New Zealand Economic Papers. He was a visiting scholar at the Charles H. Dyson School of Applied Economics and Management at Cornell University, the Board of Governors of the Federal Reserve System, the Federal Reserve Banks of Chicago and Richmond, the Reserve Bank of New Zealand, and the U.S. Department of Agriculture (ERS). He is the leader of the theme "Macro-Financial and Financial Institutions" at the Climate and Energy Finance Group at the University of Otago and was the Director of the 54th Otago Foreign Policy School.