7 Evidence-based policy: reflections from New Zealand

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Abstract

Major institutional reforms have often have proceeded on very imperfect evidence. A greater role for sound evidence in policy-making rests on three fundamental elements: data, models and institutional frameworks.

The creation of longitudinal databases and linked data sets has permitted important insights into policy design, and history shows creating such databases (and giving access to them) can help answer policy questions that were not anticipated at the time of the investment in the data. Such investment in data should be regarded as the creation of 'policy capital'.

Economic models can contribute to better policy selection, as evidenced in New Zealand by the evolution of thinking about aspects of income tax design.

Institutional frameworks can also be designed to enhance the quality of policy making. Examples include the regulation impact statement process. While the ideal of informing policy choice by open, peer-reviewed analysis by multiple think-tanks and interest groups is hard to sustain in small economies, the use of informal networks and patterns of collaboration among analysts may help.

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> There is nothing more horrible than the murder of beautiful theory by a brutal gang of facts. (Francois de la Rochefoucauld, 1613–80)

After the extended debate throughout 1890 and 1891 on the question of an Australian federation, New Zealand, which along with Fiji had had a seat at the table, finally withdrew. So, in view of the title of this roundtable, I wish to acknowledge the graciousness of my Australian hosts in including a speaker from New Zealand.

That graciousness is doubly notable as, while working for the Commonwealth Public Service in Canberra in the early 1960s I was informed that I was the top ranked finalist for a Harkness Fellowship to study for a PhD in the United States; however, I had the bare-faced impertinence to decline the offer of walking round the corner from my office in the Barton woolsheds to the Tariff Board and taking out Australian citizenship: a three minute operation for a Kiwi, I was assured, but a necessary condition for the award.

The decision by the New Zealand delegates not to pursue federation raises interesting questions about evidence-based policy. With the advent of refrigerated shipping New Zealand saw much broader markets for its produce, and did not want to be dominated by Australian interests (a recurring theme to this day). In addition, at that time New Zealand's economic performance was seen as superior (sadly, a non-recurring theme to this day). In short, based on the evidence at hand, a monumental policy decision was taken that arguably has had far reaching consequences for what will literally be centuries.

I will argue that there are two lessons we can draw from this snippet of history that are relevant to our deliberations at this roundtable. The first is that, when dealing with major institutional reforms, we typically have very imperfect evidence. And arguably those big institutional changes are what really matter in the broad sweep of history.

The second arises because, very often, the evidence we bring to bear as the basis for advising policy makers comes from the past. Furthermore, in some cases it may be overly influenced by recent events. We try to distil from the historical record some indications that if we recommend option A rather than B, the evidence suggests we could expect a 'better' outcome. Let us set aside for the moment what we mean by 'better'.

The point is a simple and well-known one: to what extent will evidence from the past be useful in predicting future outcomes? The matter assumes even greater importance when those future outcomes are spread out over many generations. We

might even postulate a new theorem of policy making: namely, the cost of being wrong rises with the square of the planning horizon. Retirement income policies would be a case in point from the contemporary policy debate in many countries.

I have chosen to organise my remarks around three broad headings; these can be summarised as data, models and structures. I will address each in turn, and will draw on some examples where evidence has made (or at least has the potential of making) a demonstrable contribution to policy formation in New Zealand. I conclude on a slightly provocative, if somewhat pessimistic, note.

7.1 Data

Clearly, without databases quantitative evidence cannot be forthcoming (Hanuschek 1999). I want to focus on two major developments in New Zealand in this regard: the growing importance of longitudinal databases, and the evolution of linked datasets. These are exciting developments and hold great promise for strengthening evidence-based policy. They are focused on detailed unit record data of firms, individuals, families and households. Increasingly it is recognised that deeper insights into the functioning of complex economies cannot come from pondering macroeconomic statistics alone. Rather, we need to better understand the micro-level behaviour of firms and individuals.

Longitudinal databases

Before turning to more recent developments, I want to highlight one of New Zealand's longest standing longitudinal studies: the Dunedin Multidisciplinary Health and Development Study, which has followed 1000 individuals born in Dunedin in 1972–73. The study has produced well over 1000 reports which have influenced policy and practice, both within New Zealand and beyond.

As an example, research findings have helped understand and respond to severe antisocial behaviour. It is now widely recognised that there are two distinct categories of antisocial behaviour (Odgers et al. 2008).

The first involves a relatively small group (mostly male) who exhibit signs of antisocial behaviour from a very young age, including an excess of neuro-cognitive deficits, hyperactivity and under-controlled temperament. Their antisocial behaviour persists as they grow up. Eventually, this small group accounts for about 50 per cent of the crime in society, including the most extreme criminal acts.

The members of the second group, who comprise some 20 per cent of the population (equally male and female), begin offending for the first time during adolescence. They have unremarkable early life histories. Their antisocial behaviour is largely driven by peers, and typically disappears by their mid-twenties, in part because they had sufficient human capital prior to adolescence.

The implications for intervention with these two groups are quite different. For the first group, very early intervention with both the child and the family is called for. For the second, group intervention (such as incarceration) is to be avoided, as this merely reinforces the strong influences of peers. Prisons are universities for criminals. These findings, originating from the Dunedin study, have underpinned new approaches to dealing with antisocial behaviour that have become mainstream in New Zealand and abroad.

However, the Dunedin study (and a Christchurch counterpart) are based on small samples from local areas. A more recent study is the Survey of Family Income and Employment, a national-level undertaking planned for eight waves, and based on an initial sample of 22 000 individuals. An additional feature is that in alternate waves there are substantial modules on health and on assets and liabilities. It is early days, but already new studies have emerged on topics such as the relation between mental and physical health and wealth accumulation, the influence of health status and chronic diseases on labour supply (Holt forthcoming), and estimates of saving behaviour based on changes in net wealth over time (Henderson and Scobie 2009).

Another development with enormous potential for providing evidence is the Longitudinal Business Database. This is built on the Longitudinal Business Frame, to which is added goods and services tax returns, financial accounts of businesses, pay-as-you-earn returns, and shipment-level export and import data from customs records. One example of the richness of this database is the ability to ask such questions as: do firms with international connections (either through trade or ownership) demonstrate higher productivity relative to purely domestic firms? Critically, one can test whether entry into exporting results in a 'learning effect' that leads to higher productivity or, alternatively, whether higher productivity firms self-select into exporting (Fabling et al. 2008). Such evidence informs policies aimed at promoting exports, for example.

Longitudinal studies can be targeted at specific sectors or population groups. The Longitudinal Immigration Survey (LisNZ) is designed to give detailed information on the settlement outcomes of migrants at 6, 18 and 36 months after taking up permanent residence. Such evidence has policy implications for the sorts of immigrants New Zealand should encourage and their support systems after arrival. The Health, Wealth and Retirement Survey, a national longitudinal study, is

providing detailed evidence on the wellbeing and retirement decisions of those aged 55–70 (Enright and Scobie forthcoming)

Why are longitudinal databases so important to strengthen evidence-based policy? Cross-sectional surveys of firms or individuals are plagued with the fact that so many of the things that matter are unobservable or at best captured by a weak proxy. Our ability to isolate the specific factors that lead to innovation by firms, that might lower recidivism by convicted criminals, or that might result in better educational outcomes, is severely handicapped by the multitude of things we cannot measure. By observing the same individual repeatedly through time, we can, under a weak assumption, control for the unobservables and have potentially more robust evidence.

Linked databases

In many countries there are large administrative databases, such as those held by tax offices, hospitals or social welfare agencies. Increasingly there are examples where these have been linked with other sources, such as surveys and census data from the national statistics office. The distinction between linked and longitudinal databases is not clear-cut. A linked database may well have a longitudinal dimension. New mechanisms have been sought to ensure the essential confidentiality is preserved.

An outstanding New Zealand case is the Linked Employer–Employee Database (LEED). Monthly returns by firms to the Inland Revenue Department list all paid employees, their earnings and their tax. This is linked to the firm data in the Longitudinal Business Frame, together with benefit data from the Ministry of Social Development. This has provided the basis for addressing such issues as the effect of minimum wages on teenage employment; employment rates of former benefit recipients; measuring labour productivity; implications of changes in the composition of the workforce over the business cycle for labour productivity, job mobility and earnings dynamics (Stillman and Hyslop 2006).

By linking health records with data on the condition of housing, an unequivocal relation has been established between cold, damp, poorly insulated houses and the health status of the occupants. The Healthy Housing program conducted by public health specialists at the Wellington School of Medicine has had a profound effect on government policy, culminating in a recently announced substantial program of public subsidies for insulating houses (Howden-Chapman et al. 2007 and 2008).

Sometimes the evidence is simply assumed rather than sought. I have lost count of the number of textbooks on public economics that cited lighthouses as a classic example of a public good. Of course, the immediate policy implication was that

they would need to be publicly provided. Then came Ronald Coase, who, in combing the evidence, found that every single lighthouse built in Britain between 1610 and 1675 was the result of private investment.

Before concluding these reflections on the role of data, I want to make the case for 'if we build it, they will come'. I would argue that, in designing a data collection effort, we cannot always foresee exactly what future questions will arise. But experience has shown that comprehensive databases can be drawn on to address a wide range of policy questions. The Australian survey HILDA (Household, Income and Labour Dynamics) is testimony to this proposition. SoFIE (Survey of Family Income and Employment), the parallel database in New Zealand, already has contributed to policy formation by addressing questions as diverse as housing affordability and deposit insurance, despite limited access.

I have been fortunate to work in an environment where some value is placed on assembling evidence on which to base the policy advice that The Treasury is required to give. I have come to refer to this process as 'building policy capital' — that is, the stock of knowledge on which we can draw to give the most informed judgments possible to the government of the day. Just as producing goods and services requires physical and human capital, the production of evidence for policy making requires 'policy capital' — and databases are an essential element of that capital.

7.2 Models

Rarely will we have a picture complete enough to provide 'evidence' on the full sweep of possible implications of a proposed policy. The use of models to arrange the evidence and to simulate the effect of policy proposals is an essential tool in the armoury of a policy analyst (Coleman and Scobie 2009).

In some cases insights are derived from a judicious blend of evidence and models. Non–point source pollution from agricultural runoff is raising the nutrient levels in a number of major lakes. Detailed land use and environmental data are being combined with economic modelling to design nutrient-trading schemes which are being adopted. In short, by working closely with farmers in affected catchments, local and regional policy makers are drawing on the evidence and the modelling to introduce innovative ways to deal with a complex problem (Kerr and Lock 2008).

The question of housing affordability has been highlighted by the sharp rise in property prices. What are the underlying drivers of house prices? One hypothesis relates to the extent of supply constraints arising from land use and building

regulations at the local level. A model of price determination combined with evidence across a large number of local jurisdictions has indeed confirmed that prices rise much more sharply in response to a demand shock in those localities with more restrictive policies. These findings have been one catalyst for a review of the regulatory environment for housing (Grimes and Aitken 2006).

Change to the income tax regime is one area where modelling becomes an essential ingredient. In 2008, a range of options was reviewed. The then Minister of Finance strongly favoured creating a tax-free threshold in order to target tax relief at lower income individuals. As a result of the tax modelling, he eventually rejected the option. Interestingly, this is one of the relatively rare cases where there is a documented account of the impact of evidence on policy making:

> … my initial preference was to create a tax-free income threshold. Intuitively, this seemed a very effective way to deliver relief to low-income workers, as it would make a significant proportion of their pay tax free. This was an idea that gained some currency in the wider community, the Labour Party, and the union movement. When I asked officials to report to me on the likely impact of such a move, however, it became clear that it would have only a minimal benefit for a very small number of low income earners. (The Hon. Dr. Michael Cullen, New Zealand Minister of Finance, speech to the New Zealand Institute of Chartered Accountants, 7 May 2008).

How much should the state invest in research and development (R&D)? In effect we are asking: what evidence do we have about the marginal rate of return to spending on R&D? If this rate is higher than the social opportunity cost of capital, then we might have evidence that society has underinvested in research (Shanks and Zheng 2006).

This has proved a challenging topic and one that, despite the use of creative models and extensive data, has failed to provide conclusive evidence. Long lead times are ubiquitous, complementarities between public and private R&D investments are difficult to untangle, and productivity growth is influenced by a host of other factors. In small, open economies such as New Zealand's, it is reasonable to suppose that a great deal of the knowledge on which we draw is generated offshore. The evidence has indeed highlighted the role of foreign knowledge in raising productivity in New Zealand, and thereby underscored the importance of policies which foster our international connectedness (Hall and Scobie 2006).

Even when there is an abundance of data, extracting meaningful evidence can present serious challenges to the modeller. Two problems stand out: self-selection bias and causality. Let me illustrate these with examples from research on savings behaviour. Consider the case of designing a workplace-based saving scheme. A robust relationship might be established showing that those who enrolled in such schemes have higher net wealth. However, the possibility that the enrolees were a

self-selected group, possessing a 'squirrel gene' that made them superior savers in any event, cannot be dismissed.

Separating out causality from mere correlation is a ubiquitous problem. In a number of countries there is renewed interest in greater financial literacy. Surveys have shown that the more financially literate also have higher net wealth, after duly correcting for the influence of a host of other variables (Lusardi and Mitchell 2006). But we are inevitably left with the nagging doubt that having higher net wealth may have been the catalyst for greater investment in financial literacy. Caution is called for, before enthusiastically endorsing a public program in high schools on the subtleties of derivatives and credit swaps.

The skilful analysis of longitudinal panel data employing the latest in statistical techniques can help unravel some of these dilemmas. This further strengthens the case I have made for greater use of longitudinal data.

At times there will be no real evidence or even prior experience. While in some instances there may perhaps be some overseas evidence, we may well be reduced to faith-based policy making. However, that faith need not always spring from divine inspiration alone. It can come from an accepted body of theory — that is, we must rely on our theoretical models of how economies behave. An example might well be the benefits of unilateral tariff reform. In large surveys, the vast majority of economists have been found to agree that, as a rule, lowering tariffs will indeed enhance national income.

7.3 Structure

In this third section I address the structure or institutional frameworks that can enhance the use of evidence-based policy. In the first instance I would argue for the free and unfettered entry into the evidence-producing industry. Different perspectives, value judgments and methodologies should all have an opportunity to compete in the marketplace for ideas.

Research will seldom produce clean and unequivocal results. As Alfred Marshall noted:

> Every statement in regard to economic affairs which is short is a misleading fragment, a fallacy or a truism. (Alfred Marshall, in a letter to L. Fry, 7 November 1914, cited in Pigou 1925, p. 484).

Robust evidence is more likely to emerge from a process involving peer review. Universities, think-tanks, research centres and units within government all have a role. There is no single institutional model that would have universal applicability.

This plurality of providers assumes greater importance when it is recognised that in many agencies there is an inherent tension between their operational responsibilities and strategic research and evaluation — the very essence of evidence building. Such activities are often seen as diverting effort from the short-run demands placed on the agency. In such an environment there are clear benefits from having other providers.

A number of countries have established institutional structures for assembling evidence for regulatory impact statements (RISs). Examples include the Office of Information and Regulatory Affairs in the United States, the Regulatory Impact Unit in the United Kingdom, the Office of the Coordinator of Regulatory Reform in Canada and the Office of Best Practice Regulation in Australia.

In New Zealand, the Cabinet currently requires that RISs accompany new proposals, but this is not a statutory requirement. The RIS is a product of a regulatory impact analysis aimed at assessing the economic, social, cultural and environmental impacts of any proposed regulation. The RIS summarises key information covering the problem, objectives, options, impacts, preferred option, implementation and review and consultation (The Treasury 2009).

While this structure falls short of a separate watchdog agency to monitor regulatory behaviour, it does provide, at least potentially, for the assembly of all relevant evidence which itself can help to identify the problem (if any), to elucidate options and to build the case for the recommended option (Wilkinson 2001). To help ensure that the regulatory process is open and transparent, RISs are published either at the time the relevant bill is introduced to parliament or the regulation is gazetted, or at the time of ministerial release.

In a small country such as New Zealand there can be a legitimate sense of frustration that efforts to build and incorporate evidence in policy making are fragmented across a host of groups spanning the government, academia and not-for-profit organisations. Many of these suffer from chronic shortages of funding and have difficulty in attracting top analysts — in short, they are institutionally fragile. The history of creating enduring institutions which each had a role to assemble evidence for the government is not encouraging. The Monetary and Economic Council, the Planning Council, the Economic Development Commission and the Institute for Social Research and Development have all merged, withered or failed. The New Zealand Institute of Economic Research would be an exception. Economies of scale are hard to achieve in such a setting. However, in my judgment, the answer lies in the operation of informal networks and collaborative efforts.

Let me return to the concept of 'better' that I touched on in my introduction. In assessing the evidence we will seek the option that will lead to a better outcome. The use of cost–benefit analysis has traditionally been one tool for reaching that judgment. However, there are well known conceptual and practical difficulties in applying cost–benefit analysis (Cowen 2000). Even absent such hurdles, cost–benefit analysis can only tell us whether A is more 'efficient' than B. Applied in this way it can discriminate between regulatory options; some will pass the test, others will be rejected.

The difficulty is that few decision makers would accept screening proposals solely on the grounds of economic efficiency. Other criteria are invariably taken into account. Furthermore, political decisions are typically taken on the basis of the distributional consequences — which groups will be advantaged — rather than the overall welfare of society. Costs are not necessarily assessed against the marginal benefits. A recent substantial increase in the subsidy to tertiary students was arguably driven more by advantaging a particular group than by enhancing the social return from public investment in education. So, rather than being a final arbiter, cost–benefit analysis can at least be an indicator of economic efficiency, identify 'lemons' that should proceed no further, and provide some sense of the trade-off implied when efficiency is sacrificed to attain other goals.

There is one dimension of having the appropriate institutional structures that may be overlooked — namely, that of communication. It is a fact that public perception is not always aligned with the evidence. Two examples will serve to illustrate this proposition. Parents (and, invariably, teacher unions) clamour for smaller classes. Not infrequently, policy makers respond, despite the mixed evidence from the Organisation from Economic Co-operation and Development that, at best, class size is weakly correlated with educational outcomes.

My second example concerns perceptions of risk. We often overestimate the probability of low-risk events and underestimate the probability of high-risk events (Viscusi 1983). Such misperceptions can be costly in so far as they lead to inappropriate policies, overinvesting in certain safety requirements (for example, oxygen on aircraft) and under-investing in other areas (for example, prostate cancer).

Communication, in its broadest sense, can operate through other channels. As researchers and business leaders establish credible track records, they may be invited onto public commissions (for example, on tax, infrastructure or innovation), thereby providing another institutional channel to influence the policy-making process.

7.4 Concluding remarks

As analysts, how are we to know when we have been successful — that is, when our evidence was, in fact, the basis for policy? Sometimes, perhaps too infrequently, we can point to a policy decision that was, in fact, evidence based; I have cited some examples from New Zealand. At other times we might have provided solid evidence but for political reasons certain options were not pursued. The 2001 McLeod Tax Review made a strong case, based on first principles, for the taxation of imputed rents on owner-occupied housing and for the taxation of capital gains (The Treasury 2001). However, the government of the day (doubtless after hearing the initial public clamouring) declined to pursue either option. But, presumably, we should not classify that as a failure.

More difficult is the case where the evidence strongly indicated that a certain policy would not be desirable and, heeding the evidence, policy makers opted not to pursue the matter. In other words: how many times has 'good evidence' been responsible for avoiding the implementation of 'bad policy'?

Presumably evidence gatherers would want this counted as a success — and it might well be so. But deciding on the counterfactual is always a messy business — and we should probably avoid creating incentives for bureaucracies to succumb to the temptation to claim credit for all sorts of bad things that might have happened but did not. Such a strategy would quickly see reports to ministers being filled with long lists of undesirable options each with a solid base of evidence as to why they should not be adopted.

Let me conclude by returning to the question posed for this session by the organisers, namely: how robust is our evidence-based policy making? You will forgive me if I adopt the position of the student who wrote on his examination paper: 'I don't know the answer to that question, but let me give you the answer to another question'.

My reason for adopting this devious approach is my conviction that we cannot generalise about evidence-based policy making. Each circumstance is different — the historical, economic and political context of each policy debate has its own characteristics and its own dynamic. Sometimes the process will get high marks for robustness — in other cases, the process will be fraught and fragile.

My alternative question is this: what steps can be taken to ensure evidence-based policy making is made more robust? In this regard I have argued that a number of steps can be taken. They relate in turn to each of the three key areas I have addressed. These include:

- attending to the unglamorous but basic task of data collection and management
- improving the conceptual frameworks and models we use to convert that data into information
- ensuring that the institutional arrangements we have for assembling, processing and communicating evidence in a manner that is useful for policy making are relevant and responsive.

It seems to me that if we can make advances, albeit in mincing steps, on all three of these fronts, the robustness of evidence-based policy making will be enhanced. The good news is that in many countries, including my own, we can point to progress.

The bad news is that for many of the really big, important questions the prospects for greater reliance on evidence are, I would argue, still rather slim. Many of these questions involve institutional change and, like the New Zealand delegation to the federation conventions, the ultimate decision is typically not informed by evidence. This not because of a lack of diligence or goodwill, but rather because the very nature of institutional change takes us into unchartered territory where evidence is a scarce commodity.

Let me illustrate this with a few examples from current policy debates:

- Should we revamp the tax system to place greater emphasis on taxing immobile rather than mobile factors, and place more reliance on consumption as distinct from income taxes?
- Should New Zealand enter into a free-trade agreement with country X?
- Should we institute a permanent retail deposit guarantee scheme?
- Should future obligations of the state (in, say, health, education and retirement incomes) be partly pre-funded?
- Should significant new prudential regulations be introduced for the finance sector?

While I do not wish to end on too pessimistic a note, I can only conclude that evidence-based policy making will at times remain a minor ingredient in the policy mix for the 'stuff that really matters'. True, historical episodes and the experience of others can and should be well canvassed for insights. And, at the very least, empirical evidence can help settle factual disputes. But, in the end, wise heads, cool judgments, the wisdom of crowds and ultimately political imperatives will determine how we respond to the tough 'wicked' questions. Evidence-based policy will remain a two-bit player in the big policy arenas.

Political leaders wax and wane in their demand for evidence. Abraham Lincoln summed up his approach in a speech to the Republican convention in Springfield, Illinois, when he said:

> If we could first know where we are, and whither we are tending, we could then better judge what to do and how to do it. (Abraham Lincoln, 16 June 1858)

It is difficult to imagine a more apt and succinct challenge as we seek to strengthen evidence-based policy.

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