New Zealand Agricultural and Resource Economics Society (Inc.)

Scoping the History of Economics in New Zealand

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Preliminaries

The history of economics, economic thinking and related disciplines in New Zealand has largely involved the transfer of ideas from Europe and North America, though there has been a reverse flow of ideas from New Zealand to the rest of the world. This paper explores economic thinking in New Zealand and attempts to draw out global contributions made by New Zealand economists.

The first question is how to define economists who contributed to the discipline with a New Zealand connection. Place of birth is an obvious factor for a small internationally mobile society so that people like Alban Phillips, Stephen Turnovsky, Peter Phillips and John McMillan may be included even though most of their work was carried out at foreign institutions. We also include foreign-born economists who spent some productive time resident in New Zealand. This category includes John Condliffe, Wilfred Candler and others. Condliffe and Candler would both satisfy a further criterion that their experiences in New Zealand clearly had a lasting effect on their intellectual outlook – they grew up in New Zealand and developed their economic expertise in relation to New Zealand circumstances. Condliffe retained a commitment to New Zealand while resident overseas.

A second question relates to how we define contributions to economic science. Research ideas, both theoretical and applied, are most important but we also include influential university lecturers and policy advisors, while recognising the old conundrum – do coaches make players or players coaches? Researchers aside, influential economists come in two groups – teachers and what we call practitioners. Practitioners are researchers focusing on the policy process of government or private firms. They maybe consulting to firms or government, they may be government employees or government appointees to boards or enquiries. This broad view encompasses both major sources of the value of

1 Paper presented at the New Zealand Agricultural and Resource Economics Association Meetings, Nelson, August 2005. The paper is work in progress, intended to stimulate input into a history of the first 50 years of the NZ Association of Economists which will be celebrated in 2009. If it is quoted, its preliminary nature should be respected. The authors acknowledge the valuable library assistance of Sarah Spring and advice from John Yeabsley.

economics and appears to be in the spirit of Marshall and Pigou, Fleming (1993). One view is that economics is valuable to society by virtue of the *answers* it provides by way of robust parameter estimates of particular models – essentially the hypothetico-deductive model of Popper in operation. The other view is that the main value of economics is its promotion of *a way of thinking* about scarcity issues which goes beyond specific answers to questions and leaves significant room in analytical work for views arising from other disciplines, especially in the technology fields. In this later view, economists can make important contributions in classrooms as well as in journals. Practitioners make contributions in this latter view via operational and strategic policy advice to firms, government departments and policy makers. Albert Tocker's *Case for the Lewis Pass Highway* is a very practical example of this involvement, so to is Will Candler's (with Duncan Ridler and Alan Ward) article on import selection in the Economist magazine, *How to grow backwards*.

We want to look at Economics in New Zealand from the 19th century onwards and so set the NZ Association of Economists (and related associations) in context. Our period therefore includes the beginning of the rise to importance of professional journals (and associations of economists) as the major outlet for research publications. The major journals, as we view them today, developed from the 1880's with two house journals, the *Quarterly Journal of Economics* (Harvard) and the *Journal of Political Economy* (Chicago), and two association journals the *Economic Journal (*UK) and the *American Economic Review* (US). In agricultural economics, the first major association journal in English, the (American) *Journal of Farm economics* appeared in 1919. The organ of the first Australasian society of economists, the *Economic Record,* appeared in 1925. *Econometrica* appeared in 1931. The New Zealand Association of Economists was formed in 1958/59 and its journal, *New Zealand Economic Papers* was first published in 1966.

As a result of these developments, the first major journals attracted articles from around the world until a local economists association and its journal were established. An example of this publication pattern is given by the journal publication record of a very famous American economist of the late 19th and early 20th centuries, Irving Fisher. His journal record is as follows with the number of articles in brackets:

Economic Journal, 1894-7 (3), 1909, 1912, 1923
Quarterly Journal of Economics, 1898-1907 (4), 1909, 1913, 1923
Journal of Political Economy, 1908 (2), 1916
Journal Royal Statistical Society, 1909, 1924
American Economic Review, 1911-24 (22)
Journal of the American Statistical Association, 1923-4 (2)

Fisher's first three articles were published in *EJ* followed by articles in *QJE* and *JPE*. However, once the *AER* was launched he tended to support that journal. We will find some similarities with the publication records of New Zealand economists with an important difference. New Zealand economists were often attracted to the larger audiences and reputations associated with journals outside New Zealand (and Australia).

It is worth remembering that the pool of economists working in New Zealand was tiny – it was tiny in other countries too compared with today, but the New Zealand profession was small compared with the contemporary profession in Europe and North America, and they were working with relatively small allocations of research resources. The important contributions made by New Zealand economists can look rather meagre outside that frame of reference.

There are a number of reports and articles that are beginning to document the contributions of New Zealand economists. Grant Fleming's Ph.D thesis, 1993, is particularly valuable for the inter-war years. His discussion and survey work go well beyond the involvement of economists in the agricultural policy area. Conrad Blyth is writing a history of the economics department at the University of Auckland. That excellent manuscript too, is much broader in its coverage than its title might suggest. It compares and contrasts developments at the four larger universities from the beginning of the 19th century. There are accounts in university histories as there are in general and other institutional histories. Ian Blair's history of Lincoln College encompasses agricultural economics and farm management developments. Other general university histories do the same thing for economics and business. Tony Endres has also written extensively on aspects of the history of economics in New Zealand and his most recent works are cited in the reference list. Robin Johnson (2003) has begun to survey the development of agricultural economists. Obituaries and biographical pieces are an important source of information. The latest in this genre is an informal (email) obituary of Professor Rex Bergstrom who died suddenly two months ago. This obituary by Peter Phillips is reproduced as Appendix D.

There are a number of reference lists appended to this paper. The first is a set of general references. There is a list of *Econometrica* articles published by New Zealanders before 1970. Then there are reference lists of six famous economists – Sir James Hight, John Condliffe, Barney Murphy, Horace Belshaw, Albert Tocker, Alan Fisher and Bill Phillips. We want to emphasise an invitation to you, to draw our attention to other existing material.

Before 1900

Some acquaintance with economic ideas was common to educated people in the middle of the nineteenth century. We therefore find knowledge of the works of John Stuart Mill in the Parliamentary Debates of the day. While we might reasonably regret that we are unlikely to find many references to the frontiers of economic knowledge in parliament today, we should also reflect that economic knowledge is now rather more complex, and we do not find many front-rank economists following Mill's example of being simultaneously a front-rank philosopher and a member of parliament.

Nineteenth century parliamentarians drew on economic ideas to address practical issues. In the English ideas that were the source most drawn on, orthodox economic ideas were dominated by free trade. This was not true of US thinking, nor of Continental thinking, and John Stuart Mill accepted the theoretical validity of the infant industry argument. So there was no simple transition from the theory of comparative advantage to policy decisions. New Zealand policy was characterised not by free trade but by a development notion. The over-riding aim was to build a larger society in New Zealand while maintaining living standards higher than those available in contemporary Britain. So establishment of new industrial processes within New Zealand were greeted with enthusiasm as an element of development, and the tariff was adjusted accordingly. Duties were levied on items that could be produced in New Zealand and not on materials that were inputs to local activity. Economic thinking was used, and misused, to claim that this policy was not a departure from orthodoxy, that it was akin to Britain's revenue tariffs merely adapted to colonial circumstances. These ideas amounted to some interesting discussion of economic ideas in new circumstances, but there was nothing comparable to the economic thinking that was emerging with Carey in the US or List in Germany.

Even the ideas of "development" remained inchoate and were easily submerged by thinking later imported from abroad. Regrettably, it was to the Royal Mint in Sydney that Stanley Jevons went and where he participated in a lively discussion about how railways should be financed as they brought new territory into an existing economy. That discussion included some original thinking about the extensive margin, and it is not fanciful to see the colonial frontier as one among several sources that enabled Jevons to be one of the pioneers of marginalist economics in the last third of the nineteenth century. But it was Australian rather than New Zealand frontier development.

Another piece of economics that got transformed into political debate about development was the Ricardian theory of rent. Henry George used it to develop – in the US context initially – the idea of the "unearned increment", the argument that landowners got an undeserved capital gain as community-financed development enhanced the value of their assets. The notion that there was a taxation base that did not involve taking anything other than an undeserved capital gain was sufficient to generate belief that expropriation of the unearned increment would enable all other tax bases to be dispensed with. This generated a single tax movement, which made Henry George a plausible candidate in presidential and state elections in the US and which generated a significant political movement in New Zealand – led naturally in Auckland.

Local exploration of such ideas might have led to thinking about an unearned increment as refrigeration made more intensive use of land attractive relative to extensive wool-grazing, but regrettably no such link has been identified in New Zealand. The land reforms of the late nineteenth century were due to pragmatism and such ancient legal ideas as those that justified compulsory purchase for defence purposes. Only on the fringes of politics – or at least only on the outer edges of the political centre – do we find exploitation of the idea of Ricardian rent, and the New Zealand use is derivative.

Nevertheless, it was in the area of development that we find the first significant contribution to economics in New Zealand. It was in an applied field. Availability of statistics and the invention of statistical concepts proceeded strongly in Europe from the 1830s, but it was where development was most visible that there were most ambitions to measure the aggregate output of an economy. A New Zealander, along with people like Coghlan in Australia, was early in this field. This first major contribution to economics by a New Zealander was from a person who was not an economist at all. Charles Knight was a medical doctor and acknowledged botanist. He arrived in New Zealand in 1845, with Governor Grey as a senior civil servant, rising to the position of Auditor-General in 1870. In 1866, Knight chaired a committee that produced a very respectable estimate of national income for the country for 1865, Dowie (1966). It supported the contention of the time that New Zealand had the highest average standard of living in the world.

The Twentieth Century to 1945

The first professional economists in New Zealand grew out of the tradition of teaching political economy at universities by lecturers with multiple disciplinary responsibilities – often history, geography, philosophy, mental science, English and/or classics. These early developments are very well summarised in Blyth (2004). A most notable example is that of the Professor of English and History at Canterbury University, Sir James Hight. His influence was very important. Hight attracted a junior customs official, John Bell Condliffe, to economics training. Condiffe won the economics prize at Canterbury University in 1913 (Copland was second). In his turn, Condliffe attracted Horace Belshaw to economics and, as their appended reference lists attest, their combined research record stretched from 1914 to the 1960's. The three of them (Hight, Condliffe and Belshaw) lived in Malvern County at some stage of their lives – so did the Rt. Hon. Jenny Shipley and Professor Tony Zwart but they are other stories!

Hight encouraged Condliffe into the statistics tradition while exposing him to economic theory based on Marshall's *Principles*. A summary of Condliffe's masters thesis on trade statistics was published in the 1915 New Zealand Yearbook (Statistics New Zealand). Condliffe carried this theme onto the world stage after he left New Zealand in 1927 initially for the Institute for Pacific Relations in Honolulu and later to the University of California, Berkeley.

There is a direct line of descent from Condliffe's early work on trade statistics to his later international contributions. He used his understanding of trade to first produce the economic history of New Zealand, *New Zealand in the Making,* which established the enduring theme in New Zealand's history of reconciling international opportunities with local adaptations. He also strengthened his allegiance to the argument that interference with free trade was costly. This latter element led him to seek a deeper understanding of how trade contributed to economic growth and Endres and Fleming have explored how Condliffe was among those who carried this thinking into analysis of the international economy in the 1930s through work centred on the League of Nations. That in turn led to Condliffe's magnum opus *The Commerce of Nations* after World War II.

Economics took a major step in New Zealand with the appointment of the first specialised professors of economics, John Condliffe at Canterbury (1920), Barney Murphy at Victoria (1920), Pringle at Otago (1921) and Horace Belshaw at Auckland in 1926. Pringle was soon replaced by Allan Fisher at Otago in 1924 and Albert Tocker replaced Condliffe at Canterbury in 1927, Blyth (2004). These four economics professors (Fisher, Tocker, Murphy and Belshaw), together with their agricultural economics counterparts at Lincoln (Albert Flay) and Massey (David Williams) gave the discipline a critical mass for the first time. They were supported in this by a very small number of lecturing assistants. The research journal records of the economics professors are given in the appendix. They also made notable contributions to economics as practitioners. Government advisory committees were often comprised of (mainly) the four economics professors. Professor Flay was starting to build the farm management advisory profession.

The research contributions of this grouping were focused on both real and monetary influences on economic activity. Horace Belshaw was an early exponent of the Cobb-Douglas production function. His initial work of the economics of agriculture led to his interest in development economics more generally. Fisher was one of the first economists to examine the primary-secondary-tertiary breakdown of an economy and regional development issues. Tocker and Fisher took a special interest in monetary theory and its application to Copland's *small dependent economy* and Keynes' ideas on colonial reactions to sterling exchange.

Tocker was essentially a one-article achiever. The 1924 paper was a remarkable one. One can find some relevant ideas in Keynes's first book on Indian finance, but otherwise Tocker stumbled on the idea of the sterling exchange standard as he looked at the NZ banking system in the context of international discussion about the return to gold. (Ashwin made the next big development in relation to NZ, with his 1929 paper about the inability of people in London to distinguish NZ and Australia.) Various American economists have later discovered the role of sterling in what they thought was a gold standard but Tocker was there much earlier, and even anticipated the idea of "gold exchange standard" although that was clearly "in the air" in the 1920s. Otherwise, Tocker's papers are rather run-of-the-mill accounts of policy and institutional developments – sound enough but never inspired. And his general reputation – even in Canterbury – was of a rather dull man. However, he was influential in the Canterbury Chamber of Commerce and its *Bulletin* included some insightful discussions of economic issues.

We have yet to review and explore the business-academic links that were generalised in the Economic Society of Australia and New Zealand. It was lost to New Zealand economics (but not agricultural economics, as we will discuss) as the *Economic Record* became more academic – in the view of business – and the Economic Society essentially collapsed. Whereas Pigou as Marshall's successor wanted economics to be part of general education and rejected any particular interest in facilitating business decisions, the Antipodean tradition – since Copland created the Economic Society in Melbourne – was much more an early step towards Economics as a Management subject. (It is interesting to reflect on the different fates of Joan Robinson on *Imperfect Competition* and Chamberlain on *Monopolistic Competition* in the 1930s. Economists even in the US usually refer to Robinson but it was Chamberlain who pointed towards management and the way the business subjects grew to independence of economics.) In the early history, the Canterbury Chamber of Commerce and Tocker played significant roles.

Allan Fisher was a much more original thinker. His discussion of sectors was paralleled only by Colin Clark, who was much more of a self-promoter. Fisher went to the NZ US legation during the war having previously gone from Otago to Western Australia and then to London to a non-university position; he was a friend of Nash although he always regarded Nash as a very woolly thinker. He then worked for the IMF for a while. (He came to NZ when the government was thinking of seeking membership of the World Bank as a way of financing the Tasman Pulp and Paper company in the early 1950s.) He developed a definition of sectors into thinking about the role of resource shifts from low-productivity uses to higher-productivity uses as a source of growth, so setting out on the path developed by Kuznets as “movement away from agriculture”. But Fisher was well aware that agriculture is not always low-productivity and in the 1950s, he challenged some of the development thinking that was equating development or modernization with industrialisation. Peter Bauer got the credit for this. Fisher had a son who was an anthropologist; in the 1960s, they jointly wrote some well-regarded economic anthropology of Africa.

In these inter-war years there were virtually no economists employed by government. As Conrad Blyth has argued, there was no real economist profession in New Zealand at that time. However, the university departments led by the professors resulted in an increased supply that would meet the demand for professional economists inside and outside government after World War 2. They also engaged directly in advice to government.

The Reserve Bank started recruiting some specific economic capacity. A.R. Low who was to he the fifth Governor of the Reserve Bank, its staff in the 1930s. George Lawn had been appointed the first Economic adviser on its staff being recruited from a South Island university. Barney Murphy was a contract adviser to the first governor, and the only paper of his in that capacity I saw made it easy to understand why a full time appointment was sought. Lawn was a solid citizen, but Alan Low raised the level of economic expertise.

Farm management and agricultural economics arose out of the German and US co-operative university programmes (lectures plus practical experience) of the early to mid 19th century. Farm management grew out of agricultural science rather than economics but gradually it moved towards the economics of agriculture – especially the microeconomic aspects including the theory of the firm and decision making. In New Zealand, the economics profession took a stronger interest in the development of agricultural economics. The development of farm management and agricultural economics departments was facilitated in New Zealand after 1928 with the appointment of David Williams, lecturer in economics at Victoria to teach agricultural economics. Williams was succeeded at Massey by a Canterbury economics graduate, H.B. Low. Among Low’s graduate students were Eric Ojala (latter to become Director-General of the Food and Agricultural Organisation of the U.N), M. Milliken, Robin Johnson and Wilfred Candler, Johnson (2003).

Brian Low was never a professor. His early promise never eventuated. He did a good thesis on Canterbury land values and then went to China and worked with Buck on a celebrated survey of land tenure in South China. Brian always had around him maps of China which Buck published but Brian drew and he talked with obvious pride of the work in China. Buck made an international career, although eventually overshadowed by his novelist wife, Pearl Buck. Brian returned to relative obscurity in NZ – presumably via war service to Massey where he was a key figure but always overshadowed by others. He moved to Wellington to be chief economist for the Monetary & Economic Council in the 1960s, and then, after some health problems, to the VUW Economics Dept where he was used mainly in elementary teaching.

Lincoln's thrust into farm management and agricultural economics was initiated by the appointment of Albert Flay in 1928. Professor Flay was coming from an agricultural science background rather than economics but he was a pioneer in the economics practitioner group. Flay was instrumental in initiating the profession of farm advisors. He began this advisory work during the great depression particularly in relation to the Mortgagee Relief Act but the work expanded under the influence of Jim Hodgson at Massey and Bucky Weston and Jim Stewart at Lincoln. More direct influence on agricultural economics, from the economics discipline, at Lincoln came with the appointment of Bryan Philpott in 1958.

A significant development at Lincoln was the introduction of a three year (plus 2 years experience) Diploma of Valuation and Farm Management. The supply of these graduates provided a pool of farm management analysts that enabled the State Advances Corporation to initiate lending on project finance (rather than equity) for farm development.

We have left for future attention the relatively well-researched area of the role of economists in advising governments in the Depressions years. Of the economists mentioned here, the role of Belshaw was greatest. The key figure was Copland – the Canterbury Graduate, who became Professor of Commerce in Melbourne and was the major founder of the Economic Society of Australia and New Zealand. But Belshaw was certainly important in transmitting the ideas of Keynes into the Australian and New Zealand cases and n joining them to the work he did on agricultural fluctuations in the 1920s.

1945 To 1970

In this period the most notable contribution to economics by a New Zealander was a relatively small piece of research work. Bill Phillips (see his reference list) was born in New Zealand but following war service, was educated at the London School of Economics, Dalziel and Lattimore (2004). At LSE he came under the strong influence of James Meade and did some extraordinary work in mathematical economics on dynamic models of the economy. (His mechanical model of the economy, MONIAC (a copy of which is at the NZIER), even reached artistic recognition in 2003 at the Venice biennale.) Then in 1958 he published his very famous paper – elucidation of the apparent causal relationship between unemployment and money wages in the UK. It offered economists an important missing link in macro models. That relationship became the basis for the now famous Phillips curve (unemployment and inflation) and the later augmented Phillips curve.

This quantitative modelling approaches of Bill Phillips (both normative and positive) was a track shared by a number of famous New Zealand economists of the era. The 1930's mathematical models of markets and economies were coming of age. Electric calculators, then computers, eased the computational load significantly. Wilfred Candler met his wife Margaret in the linear programming computational room at Iowa State University in the mid 1950's. Margaret was carrying out LP iterations by hand using the simplex method on very large pieces of paper (a 20 by 40 LP would take about a week to compute, with checks and Rex Bergstrom used to say that it took 3 days to invert an 8 by 8 matrix with a calculator).

Econometrica had become generally regarded as the top journal in the expanding quantitative fields. In the period to 1970, four New Zealanders contributed to this journal - Rex Bergstrom, Wilfred Candler, Conrad Blyth and Robin Court, Appendix B. Bergstrom and Court published in econometrics and Candler and Blyth in programming models and modelling. Conrad Blyth's 1956 article in *Econometrica* is the only one in economic theory, per se.

Without taking anything away from the other three, the 1966 contribution by Rex Bergstrom is perhaps the greatest theoretical contribution to economics by a New Zealander before 1970. His contribution is described by Peter Phillips in appendix D. Bergstrom was a self trained mathematician who was encouraged in this direction by his professor at Auckland, Colin Simkin. Condliffe had recognised the mathematical direction that economics was taking in the 1930's but, not surprisingly given his lack of maths training, had stuck to his standard statistical approaches in his further work. Economics training was at a mathematical turning point. Economics researchers in most journals, both theoretical and applied, would henceforth be formally trained in mathematics and statistics, alongside economics.

Some of the other important research contributors at the time included Colin Simkin (Auckland), Bert Brownlie (Auckland and Canterbury), Wolfgang Rosenberg (Canterbury), Sir Frank Holmes (Victoria) and Bryan Philpott (Lincoln and Victoria).
The notable economics teachers of the era included Bergstrom (Auckland), Philpott (Lincoln and Victoria), Hodgson and Candler (Massey), Brownlee (Auckland and Canterbury), Stewart (Lincoln) and Simkin (Auckland). They stand out in the tradition of Hight – coaches who developed some notable players in the next generation of practitioners (Jaz McKenzie, Graham Scott, Bruce Ross, John Chetwin and Alan Bollard) and researchers (Stephen Turnovsky, John Riley, Peter Phillips, Robin Court, Alan Frampton (sugar beet), Grant Scobie, Bob Townsley, Lew Evans, Wayne Cartwright, Bill Schroder, Tony Chisholm, Viv Hall, Leslie Young and many others).

Weststrate and Rosenberg brought a continental European categorisation and an institutional approach to Canterbury. Souter at Otago has some reputation with philosophers.

These lists are far from complete and one of the challenges we face is to follow and document the strands into the current era.

Three notable practitioners stand out over the period 1945-70 – Sir Frank Holmes (Victoria), Conrad Blyth (Auckland) and Bryan Philpott (Lincoln and Victoria). In the 1950s, Simkin would also have figured in the list, and Danks was important in countering the influence of Social Credit in New Zealand public life. Frank Holmes led a number of major policy enquiries, was instrumental (with Horace Belshaw, Conrad Blyth and others) in establishing NZIER and was the most important public commentator on trade policy for a generation. That was not an easy task. Trade policy in New Zealand was extremely isolationist over the period 1938-84 with effective rates of protection tending to infinity. Sir Frank handled it in ways that kept him in the loop and ultimately allowed him to lead moves through NAFTA and bilateralism to CER, multilaterism and beyond. Marshall would probably have remained very quiet, Fleming (1993).

Some perspective on the difficult role of economic practitioner may be gained from the following story. Max Corden was asked by an Australian select committee in the 1960's, what he thought the import tariff should be set at. Given that nominal rates were around 60 percent at the time, he replied that he thought 35 percent would be ideal! Given that Holmes and Corden were both very aware of the social costs of high tariffs, it is no mean feat to try to guide public thinking towards free trade over many decades. Contrast that story with the 1987 tariff review hearings in New Zealand where Tony Rayner (Canterbury and Lincoln) was asked whether there was at least one industry that should have a trade policy intervention. Tony confidently replied that he thought perhaps it would be wise to apply an import subsidy to steel to correct negative production externalities.

For shorter periods than the others, Ian McDougall (Massey), Sir James Stewart (Lincoln), Les Castle (Victoria), Ian Danks (Canterbury) and John Ward (Lincoln and Waikato) all took on economics practitioner roles in New Zealand over the period. Economists as public sector practitioners blossomed in this era. In the public sector, Henry Lang took over the role of secretary to the Treasury and Roderick Deane became chief economist of the Reserve Bank.

Economics took a role in developing the management sciences and business schools before 1970. Contributions to operations research and econometrics have already been mentioned. More generally, teachers and practitioners in farm management and agricultural economics developed the work begun by Albert Flay. Massey and Lincoln were both prominent in this area, as were public sector practitioners in producer boards and the Ministry of Agriculture. Essentially, what was involved was tailoring and extending the theory of the firm to encompass technology, finance and management for farm firms as a basis for overall management advice. New Zealand farmers were very receptive to these ideas with the result that participation rates were very high (by world standards) in individual (farm advisory services) and collective (discussion groups) services developed by economic practitioners. One important result was that at least the farm management segment of agricultural economics maintained links with the management disciplines though not to the extent of combining farm management with management schools, or agricultural economics departments.

Economics itself has so far resisted attempts to combine with the business schools at the universities even though economic practitioners have played significant roles in business consulting firms. This contrasts with US and Australian business schools, at least, where economists are increasingly prominent on staff lists.

Concluding Themes and Questions

There was an extraordinary growth of Economics in numbers and range after 1945, an international phenomenon in which New Zealand shared. By most measures, there are more living economists than there are dead economists (from the remotest origins). Economics as an academic enterprise was submerged by economics as a profession within the public sector and the business world.

Is there a challenge to Economics as a discipline? Philosophy was once the core of the Arts curriculum, but History, Economics, Sociology, Anthropology and Political Science broke away and Philosophy is now a minor component, albeit prestigious – perhaps to be joined with Classics and kept in a kind of category of conservation studies celebrating past academic splendour. As we look at how accounting, finance, management, marketing etc have grown, could economics be on a similar track?

Within New Zealand, there is a challenge in at least some universities to the relationship between economics and business subjects, Blyth 2004. We need a more concentrated study of the role of economics in consulting and in business.

The central academic activity remained dominated by constrained maximization – under what circumstances could private interest generate a social optimum – from Adam Smith to Arrow & Debreu. Lot of challenges have been introduced, but usually absorbed as exploring constrained maximization within more complex social settings – externalities, uncertainty, development economics, postwar reconstruction, then decolonization etc – and reabsorbed in the form of growth theory and the dynamics of constrained maximisation.

Econometrics was an invention of agricultural economists before 1925 – and its recogbnition made Leontief the patron saint of agricultural economics. These early beginnings were later formalised by the Rotterdam and Scandanavian Schools and the Cowles Commission. This helped bring agricultural economics into the mainstream. Single equation models became large-scale models and targeted on comprehension of crucial relations. Then large scale models became huge models only to become single equation models again under the influence of time series developments and causality tests.

We see internationally, a continuation of the tension between different conceptions of economics – an academic enterprise, growing organically, and a set of ideas which explores empirical situations and creates new ideas as new circumstances are encountered. (This is related to the earlier distinction between economics as a mode of enquiry and as a set of lessons, but it is not the same.) So internationally, we find much more emphasis on open economies and eventually discussions of globalisation. We get a resurgence of emphasis on prices, as stagflation in the 1970's destroys confidence in benevolent government. And with the arrival of new techniques for calculating the value of options for managing risk, we get a redistribution of tasks between governments and collective decisions on the one hand and market transactions on the other. How were these broad trends in the international discipline of economics reflected in New Zealand?

One partial answer is that internationally, economics became much more dominated by the US. Each of the New Zealand departments of economics faced the question of how it should respond to US economics rather than maintain links with Britain, (Blyth, 2004 again). This aspect too provides an avenue for fruitful historical research.

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APPENDIX A

Important Economics Books

Candler, Wilfred (1958), *Linear Programming Methods.* With Earl Heady. Ames: Iowa State UP.

Condliffe, John (1959), *New Zealand in the Making.* London: Allen and Unwin.

Condliffe, John (1959), *The Welfare State in New Zealand.* London: Allen and Unwin.

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Sutch, W.B. (1966), *Colony or Nation?* (ed. M. Turnbull). Sydney: Sydney UP.

APPENDIX B

Articles in Econometrica before 1970

In 1932, an international journal in economics began publication entitled Econometrica. In the modern tradition of mathmatical economics and econometrics, it remains, arguably, the premium journal in its fields. Contributions by New Zealanders include:

Bergstrom, A.R. (1955), *An econometric study of the supply and demand for New Zealand exports.* 23 pp. 258-76.

Blyth, Conrad (1956), *The theory of capital and its time measures.* 24 pp. 467-79.

Candler, Wilfred (1960), *A short-cut method for the complete solution of game theory and feed-mix problems.* 28 pp. 618-34.

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Court, Robin (1967), *Utility maximisation and the demand for New Zealand meats.* July-October.

APPENDIX C

Publications of Hight, Condliffe, Tocker, Belshaw, Fisher and A.W.H. Phillips in economics journals.

In chronological order. The main source used was the Index of Economic Journals, American Economic Association.

Sir James Hight

1914. (with H. James and G.G. Hancock). *The labour movement and the strike of 1913 in New Zealand.* EJ 24 pp.177-204.

John Bell Condliffe

1919. *New Zealand during the war*. EJ 29, pp. 167-85.
1919. *The New Zealand coal industry.* EJ 29, pp. 506-507.
1921. *Wage arbitration in New Zealand,* EJ 31 pp. 547-54.
1926 and 1927. *The industrial revolution in the Far East.* ER
1927 (with H.R. Rodwell). *The course of rural land values in Canterbury, New Zealand.* ER.
1932. *The pressure of population in the Far East,* EJ.
1932. *William Pember Reeves.* EJ 42 pp. 666-69.
1938. *The value of international trade.* Ec 5 pp. 123-37.
1939. *An African survey.* SAJE 7 pp. 295-304.
1939. *The international position as it affects New Zealand.* ER 15 suppl. Pp. 17-24.
1942. *The disposal of agricultural surpluses.* JFE 24 pp. 434-46.
1943. *War and economics.* JPE 51 pp. 157-65.
1944. *Economic power as an instrument of national policy.* AER 34 pp. 305-14.
1944. *Exchange stabilisation and international trade.* REStat 26 pp. 166-69.
1948. *The foreign loan policy of the United States.* EI 1 pp. 568-83.
1949. *John Chapman* [obit.] ER 25 pp. 92-3.
1953. *Underdeveloped countries: the theory and practice of technical assistance: discussion.* AER 43 pp. 130-33.

A.H. Tocker

1924. *The effects of the trade cycle in New Zealand.* EJ 34, pp.128-34.
1924. *The monetary standards of New Zealand and Australia.* EJ 34, pp.556-75.
1925. *The measurement of business conditions in New Zealand.* ER 1 pp. 47-62.
1928. *Notes on New Zealand control boards.* ER 4 suppl. Pp. 155-57.
1928. *Weekly bank returns in New Zealand.* ER 4 pp. 319-20.
1929. *Regulation of currency in New Zealand.* ER 5 pp. 143-6.
1929. *The New Zealand budget.* ER 5 pp. 346-7.
1930. *The International Labour Conference.* ER 6 pp. 285-88.
1931. *New Zealand banking and currency: The Niemeyer Report.* ER 7 pp. 289-92.
1931. *Public finance and depression in New Zealand.* ER 7 pp. 239-45.
1932. *Exchange control in New Zealand.* ER 8 pp. 112-5.

1933. *The New Zealand Banks' Indemnity Act.* ER 9 pp. 124-25.
1934. *The Reserve Bank of New Zealand.* ER 10 pp. 88-91.
1934. *The establishment of central banking in New Zealand.* ER 10 pp. 222-9.
1935. *Recovery measures in New Zealand.* ER 11 suppl. 78-96.
1935. *The Mortgage Corporation of New Zealand.* ER 11 pp. 93-7.
1936. *Exchange policy and economic recovery in New Zealand.* ER 12 pp. 88-91.
1939. *The development of central banking.* ER 15 suppl. pp. 45-57.

Horace Belshaw

1926. *The profit cycle in agriculture: some notes on factors which affect its intensity.* EJ 36 pp. 29-49.
1928. *The economic position of the farmer in New Zealand.* ER 4 pp.53-70.
1929. *Local body indebtedness in New Zealand.* ER 5 pp. 202-25.
1932 (with F.B. Stephens). *Recent developments in co-operative credit to farmers in New Zealand.* ER 8 pp. 104-9.
1932 (with F.B. Stephens). *The financing of afforestation, flax, tobacco and tung oil companies.* ER 8 pp. 237-61.
1933. *Crisis and readjustment in New Zealand.* JPE 41 pp. 750-76.
1936. *Mortgage adjustment and the reorganisation of farm finance in New Zealand.* JFE 18 pp. 568-86.
1937. *Guaranteed prices for New Zealand exports.* ER 13 pp. 168-88.
1939. *Stabilisation in a dependant economy.* ER 15 suppl. Pp.40-60.
1939. *Guaranteed prices in operation.* ER 15 suppl. Pp.69-81.
1939. *The Maori people: one hundred years after.* ER 15 suppl. Pp. 95-109.
1939. *Import and export control in New Zealand.* ER 15 pp. 173-86.
1939. *Reserve Bank Amendment Act 1939.* ER 15 pp. 241-45.
1945. *New Zealand in the Post-war World.* CJE 11 pp. 388-401.
1946. *Economic Problems of Foreign Areas: discussion.* (with others). AER 36 pp. 650-60.
1947. *Observations on industrialisation for higher incomes.* EJ 57 pp. 379-87.
1952. *Economic development in Asia: a preliminary view.* EI 5 pp. 844-71.
1955. *Population growth and levels of consumption in New Zealand.* ER 31 pp. 1-17.

Allan George Barnard Fisher

1928. *New Zealand wheat: a sliding scale experiment.* ER 4 pp. 306-313.
1929. *The drift to the towns.* ER 5 pp. 234-52.
1930. *Unemployment in New Zealand.* ER 6 pp. 118-23.
1930. *Distribution of income in New Zealand.* ER 6 pp.221-34.
1932. *The New Zealand economic problem.* ER 8 pp. 74-87.
1932. *Fundamental presupposition for successful economic planning.* ER 8 suppl. pp. 88-98.
1932. *Sliding scales in depression: New Zealand wheat.* ER 8 pp. 262-69.
1933. *Capital of growth of knowledge.* EJ 43 pp. 379-89.
1934. *Crisis and readjustment in Australia.* JPE 42 pp. 753-82.
1934. *Investment policy in a progressive economy.* ER 10 pp. 149-66.
1934. *The New Zealand monetary committee.* ER 10 pp. 260-65

1935. *The significance of stable prices in a progressive economy.* ER 11 pp. 49-64.
1935. *Does an increase in the volume of production call for a corresponding increase in volume of money?* AER 25 pp. 197-211.
1935. *A policy for a New Zealand reserve bank.* ER 11 pp. 157-66.
1936. *Federal grants.* ER 12 pp. 214-31.
1937. *The balance of trade between South Africa and Australia.* SAJE 5 pp. 1-10. Errata p.217 June 1937.
1937. *Shorter working hours and industrial transfers.* ER 13 pp. 78-84.
1937. *Technical improvements, unemployment and reduction in working hours.* Ec 4 pp371-85.
1937. *Twentieth century banking in Australia.* ER 13 pp. 159-67.
1939. *Production, primary, secondary and tertiary.* ER 15 pp. 24-38.
1943. *A new liberal order.* Ec 10 pp. 176-87.
1943. *Some essential factors in the evolution of international trade.* MS 13 pp. 1-23.
1946. *"Full employment" and income inequality.* EJ 56 pp. 18-26.
1946. *Tertiary production as a post-war international economic problem.* REStat 28 pp. 146-51.
1946. *Nicholas Mirkovich* [obit.] EJ 56 pp. 510-1.
1947. *Less stabilisation, more stability.* Kyk 1 pp. 1-18.
1950. *Alternative techniques for promoting equality in a capitalist society.* AER 40 pp. 356-68.
1952. *A note on tertiary production.* EJ 62 pp. 820-34.
1954. *Marketing structure and economic development.* QJE 68 pp. 151-4.
1964. *Tertiary production: a postscript.* EJ 64 pp. 619-21.

Alban William Housego Phillips

1950. *Mechanical models in economic dynamics.* Ec 17 pp. 283-305.
1954. *Stabilisation policy in a closed economy.* EJ 64 pp. 290-323.
1956. *Some notes on the estimation of time-forms of reactions in interdependent dynamic systems.* Ec 23 pp. 99-113.
1957. *Stabilisation policy and the time-forms of lagged responses.* EJ 67 pp. 265-77.
1958. *The relation between unemployment and the rate of change of money wage rates in the United Kingdom.* Ec 25 pp. 283-99.

Journal Legend

CJE Canadian Journal of Economics
Ec Economica
EI Economia Internazionale
EJ Economic Journal
Em Econometrica
ER Economic Record
JASA Journal of the American statistical Association
JFE Journal of Farm Economics (now American Journal of Agricultural Economics)

JPE	Journal of Political economy
Kyk	Kyklos
SAJE	South African Journal of Economics
YB	Yorkshire Bulletin of Economic and Social Research

APPENDIX D: A.R. Bergstrom, an informal obituary by Peter Phillips

I bear very sad news.

Rex Bergstrom, a former Professor in the Department of Economics at the University of Auckland, died on Sunday morning in a London hospital. He passed away in his sleep. He was admitted a week ago after a fall in his apartment in London. Rex had just completed his last book (co-authored with one of his former students from the University of Essex, Ben Nowman), which develops and estimates the latest version of his econometric model of the UK economy. He was planning to stay in London to see the book in print at the LSE bookshop before returning to New Zealand to be with his family.

Following the publication of a path-breaking article in Econometrica in 1966, Rex Bergstrom became the world's leading exponent of continuous time econometric modeling, a subject that has now an extensive audience of theorists, econometricians and practitioners especially in finance. Rex's contributions cover the entire field of research, encompassing the development of economic models of cyclical growth, econometric methods of estimation, and major empirical implementations of the methodology. A large part of Rex's life was devoted to this intellectual task and his many accomplishments in this field are an extraordinary testament of academic devotion.

It is an especially sad day for New Zealand econometrics. One half of Rex's working academic life was spent in New Zealand and his impact on quantitative economics in this country has been enormous. He was New Zealand's first econometrician and, over the period 1950-1970, he trained many successive generations of New Zealand economists. Hugh Fletcher, the Chancellor of the University of Auckland, Alastair MacCormick, the past Dean of the School of Business and Economics, and former acting Vice Chancellor of the University of Auckland, Viv Hall, Professor of Economics and former Head of the School of Economics at Victoria University, and I were among Rex's students at the University of Auckland during the 1960's.

When Rex joined the Department of Economics at the University of Auckland, the department had a complement of only 4 people, led by Colin Simkin. During his time at Auckland, Rex taught money and banking, public finance, and all the economic theory courses. In the 1960's he developed and taught an econometrics sequence that was the equal of the best Ph.D courses offered in North America and Europe. Rex supervised many of the masters dissertations at Auckland during the 1960's, encouraging his students to do empirical research on various aspects of the New Zealand economy. Many of Rex's students at Auckland subsequently went on to become academics in economics, accounting, marketing, and econometrics.

In addition to the two decades he spent at Auckland, Rex also played a key role in developing econometrics in the UK, starting at the LSE where he visited over 1962-1964, and later at the University of Essex. The 1960's was a period when the LSE took over from Cambridge as the leading centre in econometrics in the UK. It was during his stay at LSE that Rex developed a model of cyclical growth, extending earlier trade cycle models by introducing production, and wrote his influential monograph on Economic Models. In 1970, Rex moved from the University of Auckland to the University of Essex, where in addition to his academic work and to supervising several Ph.D dissertations in econometrics, he served as Chairman of the Department of Economics, Dean, and Pro-Vice Chancellor.

All of Rex's work bears the hallmark of exemplary scholarship. He held a deep concern for fundamental issues in economics, was a lucid thinker and a fine expositor. His lectures in microeconomics and econometrics were models of clarity. His research was ambitious and original. In addition to his work on continuous time modeling, he initiated studies on the exact distribution of econometric estimators, providing for the first time (concurrently with independent work by Robert Basmann in the US) the finite sample distribution of the maximum likelihood and least squares regression estimates in a simple Keynesian model of simultaneous equations. After the publication of Rex's paper in Econometrica 1962, Trygve Haavelmo a later Nobel Laureate in economics, came rushing up to Rex at a conference telling him how excited he was about Rex's results, that he had himself tried to obtain these formulae for over a decade. Rex told me the problem yielded to a concentrated mathematical effort that he made over three weeks one summer. One of Rex's greatest loves was the subject of mathematics and the economy and precision of mathematical formulations of economic problems and econometric methods shines through in all his research, but especially so in this particular article in Econometrica.

Rex's passing is a great loss for the profession of economics and this loss will be dearly felt by a wide community of scholars throughout the academic world. Many economists, accountants and other professionals both in New Zealand and in the UK hold with pride a Bergstrom pedigree. We have much to remember of the times when Rex guided our work, taught the classes we attended, and influenced us through his writings and research. These wonderful memories of Rex we can carry forward throughout our own working lives.

May, 2005