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LEARNING FROM OTHER ECONOMIES: THE UNIQUE
INSTITUTIONAL AND POLICY EXPERIMENTS DOWN UNDER

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ABSTRACT

This paper argues that detailed studies of particular economies, such as Bob Gregory's work on Australia, are relevant to all of economics. The paper builds on the concept of a model species from biology to develop the notion of a model economy – one whose experiences illuminate fundamental economic issues; examines the criterion for an economy to serve as a model economy; and describes three areas – labour relations and the awards system of wage-setting, marketizing public services and growth through immigration and natural resources – where Australian experience provides insights into economic behaviour and the operation of markets broadly.

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Why should anyone outside of New Zealand or outside the circle of friends of Bob Gregory be interested in the Australian economy? It's far away from the real world of the US, Europe, Japan, and from the growth economies of Asia. With just 0.3% of the world's population and 1.1% of world output, Australia is a small player in the world economy. It has natural resources but not the oil that fuels global economic activity and pollutes the planet.

In this paper I argue that there are good reasons for economists to concern themselves with Australian economic developments even if they live far from the Antipodes and have never talked shop at Australian National University. Australia does enough things differently than other economies, such as the awards system of wage-setting, the income contingent mode of funding higher education, and privatizing public employment services, to provide insights into economic behaviour and the operation of markets that are otherwise difficult to identify. To the extent that the economic behaviour of people is comparable across countries, what we find in Australia can be generalized more broadly.

My argument has three parts. First, I build on the concept of a *model species* from biology, where analysts have thought deeply about generalizing findings from one species to others, to develop the notion of a *model economy* – one whose experiences illuminate fundamental economic issues and institutional and policy choices in other economies. Second, I examine the criterion necessary for an economy, such as Australia's, to serve as a model economy, and for the generalizability of particular findings. Section III examines economic areas in which Australia would seem to be a model economy, deserving detailed attention

from the rest of the world. Since Bob Gregory's work has focused almost exclusively on the Australian economy, I view the paper as an examination of the validity of a country-specific "Gregorian" approach to economic research.

I. Learning from Model Species- Economies

Almost everything we know about the fundamental properties of living cells – how they grow and divide, how they express their genetic information, and how they use and store information – has come from the study of model organisms. – Fields and Johnston, 2005

Most biologists spend their scientific lives studying particular species – slugs, bacteria, flies, yeast, squid, zebra fish, mustard plants, mice, etc – known as *model species or organisms*. Biologists dedicate themselves to a particular species not because they have a weird fetish for that creature but because that species provides exceptional insight into some fundamental biological issue. Mendel's peas opened the door to the genetics of inheritance that no other organism might have done. The fruit fly allowed Morgan and others to locate mutations on genes and to examine how mutations affect phenotypes and recently for Bender to illuminate the genetics of behaviour. The giant axon of the squid *Loligo pealei* makes it a model for studies of nerve functions. The transparent body of the zebra fish allows scientists to see the operation of its internal organs. Mice are a model for diseases that affect humans because mice have an immunological system and contract some human diseases. And so on.¹

i. Attributes of a Model

Biologists highlight four factors in determining whether a species becomes a model organism, studied by hundreds or thousands of researchers around the world, or lives a life of quiet obscurity²: 1) the tractability of researching the species, which depends on accessibility, the ease of experimenting on it and the cost of maintaining it with extant laboratory technology;³ 2) the presence of some distinct feature(s) that allows researchers to make outstanding/speedy progress in a significant line of inquiry; 3) the potential for generalizing findings to other creatures, particularly to humans;⁴ 4) the cumulated knowledge about the species, which creates (in our lingo) economies of scale or agglomeration effects in research.⁵

The parallel in economics for experimental tractability is the *availability of reliable data on economic behaviour*. When Simon Kuznets developed national income accounts in the 1920s, the critical data need was for reliable statistics on sales and income to show how the aggregate economy was performing. Today the data go far beyond national accounts and measures of economic aggregates to include diverse micro data on individuals and firms, such as: longitudinal information on employees or employers; matched employer-employee files over time; time budget studies; data on patents and R&D; measures of individual health and biological markers linked to wages, employment, and other outcomes; measures of workplace practices and productivity; and so on. The French and Scandinavians have been particularly good in developing matched longitudinal employee-employer data files (Abowd and Kramarz, 1999). The Scandinavians have good data relating biological

measures, such as birth weight, to future outcomes. The UK has exceptional data on labour practices at workplaces in the form of the Workplace Employment Relation Surveys.

Ready availability of the standard labour force or firm survey data files that countries use to measure the state of an economy is also important. Nearly every country conducts censuses and surveys of businesses and residents. But most limit access to these data. A model economy should ideally provide downloadable data over the Internet, so that researchers around the world can study its workings. The University of Minnesota PUMS project that makes US Census files freely available on the Internet and the US Bureau of the Census's provision of Current Population Survey files to researchers (most easily downloadable from NBER) have sparked work on the US using those particular sources of information.

For its part, Australia has an excellent body of statistics for analysis of the labour market, ranging from cross-section surveys to longitudinal surveys (Le and Miller, 1998; Marks and Rothman, 2003), including a unique longitudinal survey of immigrants (Cobb-Clark, 2001), workplace surveys (Hawke and Wooden, 1997), time use surveys, regular Censuses (Flatau, 1997), input output tables (Gretton, 2005), the Household Income and Labour Dynamics in Australia survey (Watson and Wooden, 2004) and so on. If the Australian Social Science Data Archive (<http://assda.anu.edu.au/index.html>) or the Australian Statistical Bureau were to make these files readily downloadable on the Web, it would attract international research attention, to the benefit of Australian social science and

policy-makers and social science broadly.

Tractability of research involves one additional factor as well: ease of *generating new data from market participants through interviews or surveys*. Given that statistical relations are often open to multiple interpretations, the testimony of market participants, who have first hand knowledge of their own incentives, motivations, and circumstances, can be crucial in understanding events. As a case in point, when California had its energy crisis in 2000-2001, most economists blamed the crisis on impersonal market forces that operated in an inefficiently deregulated energy marketplace.⁶ Claims that oil supplying firms had engineered the crisis were dismissed as the blathering of radical conspiracy theorists, though criminal manipulating of markets fits well with economic theory and the history of capitalism. Investigations by the US Attorney for Northern California showed that Enron had manipulated the market and produced guilty pleas from the market traders.⁷ Statistical analyses would never have uncovered the illegal manipulation behind the California crisis. While this is an extreme case, the statements by participants in other decisions also cast light on competing explanations that neither theory nor econometrics can match. In the labour area, the statements by ACTU and national union leaders provide critical insight into why the Australian union movement endorsed a decentralized wage-setting system in 1990-91 (Briggs, 2001, pp. 33-34). One of the few advantages that social science has over the natural sciences in research is that we can interrogate the decision-makers about whom we build our models, which should help us assess competing explanations or theories. Without controlled lab experiments to

nail things down, we have to use whatever information we can get.

Just as a model organism requires some special feature that gives it a leg up in discovery, a model economy must experience *some special exogenous or near exogenous variation in economic conditions* that allows researchers to draw stronger or more reliable inferences from it than from some other economy. The variation could be a change in policy – a sudden alteration in tariffs, imposition of new labour laws, development of an independent central bank; rapid expansion of the supply of schooling; etc; – that creates incentives for people to alter behaviour. It could be a shock from outside, such as changes in the prices of exports or imports due to factors overseas, an energy shortage per the California crisis, a large demographic shift. It could even be an epidemic that kills much of a population, which T.W. Schultz (1983) suggested was an ideal test for the claim that traditional agricultural societies have labour surpluses with zero marginal product of labour. What is important is that the change be sufficiently big that reactions to it dominate other factors impacting an economy over some period of time.

The availability of experimental or pseudo-experimental measures of outcomes before/ after policy initiatives can also provide insight into economic behaviour beyond responses to the specific initiative. Researchers in economic development have studied the economics of education in Columbia and Indonesia because those countries have varied investments in schooling in experimental or pseudo-experimental ways and have made the data available to researchers (Duflo, 2002; Angrist, Bettinger, Kremer, 2004). The hope is that the findings

from these countries can be generalized to others, and thus help guide their investments in schooling. Since we can conduct random assignment experiments even in countries that lack good data in other domains, low wage countries have a cost advantage in experimenting with economic incentives where the results are likely to generalize to other economies. Extant studies show similarity in responses in experiments across country lines (Kagel and Roth, 1995).

Finally, the social science parallel to the fourth point listed above for a model species – a cumulated body of knowledge about the creature – is the strength of a country’s research community. A research community with knowledge about how things work can be critical in assessing specific reforms, particularly those relating to broad-ranging institutions and practices. De jure measures of institutions available to outsiders may not accurately represent how a given economy operates (Chor and Freeman, 2005), leading to potentially invalid interpretations, which a knowledgeable research community can correct. Availability of data on diverse parts of an economy - national income and flow of funds accounts, measures of trade and investment – is also critical, as it allows researchers to check the representativeness of samples and plausibility of statistics in particular areas.

In sum, any economy that combines good information with natural experimental variation or random assignment experiments in practices/policies is a viable candidate for model economy in those areas. At the minimum, we will learn something about how the particular factors operate in one setting, which can be compared to how they operate in other economies. At the maximum, we can

learn something about behaviour or markets that generalize from that economy to other economies which we could not learn elsewhere.

II. Generalizing When Ceteris Is Not Paribus

The degree to which results can be generalized from a model system is more problematic in economics than in biology. In biology, cellular processes operate similarly across living creatures, in part because they obey universal scientific laws and in part because they have the same evolutionary heritage.⁸ We share 96% of our DNA sequence with chimpanzees, according to the latest estimates⁹, are closely related to worms and flies, and dingos and kangaroos, for that matter. But generalizations across specie lines are easier at the molecular and gene level than at the level of complete organisms. Doctors often test medicines on mice or monkeys first, but they invariably do human trials to see if the medicine works on humans.

Using the biology analogy, the responses of individuals to incentives would seem to be comparable to cellular processes, while the interactions of people in organizations or markets as well as the general equilibrium interactions in entire economies would be closer to whole organisms. This suggests that phenomenon where the independent responses of people are critical— say demand responses to price incentives – would generalize better across economies than phenomenon involving interactions among groups, such as the institutional design of markets. From this perspective, estimates of demand and supply elasticities should be more comparable across countries than, say, estimates of the effects of

unions on outcomes.

Population and output per capita should also affect generalizability.

Analysts often claim that the successes of Hong Kong or Singapore – city-states – have little to say to larger countries such as Korea or China, since social complexity grows with population. The European Union social dialogue model of dealing with labour problems works better in Scandinavia, Austria, Ireland, than in the more populous countries. On output per capita, development economics lives on the notion that developing countries differ in important ways from advanced countries; while advanced countries rarely look at what they can learn from developing countries.¹⁰

But even when economies have similar levels of complexity, generalizing from one to another can be problematic to the extent that institutions or practices affect outcomes interactively. When institutions/practices affect outcomes without interactions, linear regressions identify their impact on outcomes. But if the effect of an institution depends on the presence/absence of others, so that the *configuration* of practices matters, the situation is more complex (Ragin, 1987). In this case, a country may have to transform many institutions and practices to match the performance of a model economy,¹¹ per the big bang transition from communism to capitalism that has not worked well for most ex-Soviet states. Because the number of configurations rises rapidly with the number of institutions/practices, moreover, it is difficult to determine what works or does not work from the limited number of observations we have on particular economies.¹²

To deal with this problem, analysts seeking to learn from cross-country

comparisons often group economies into families with similar institutional features. The advanced English-speaking economies provide one natural grouping, with their strong market orientation and English common law tradition (Freeman, Boxall, Haynes, forthcoming 2006). Within that grouping, it is presumably easier to generalize between Australia and New Zealand, or between Canada and the US, than from either of those groups to the United Kingdom or Ireland. The Scandinavian countries form another grouping over which generalizations would seem to have *prima facie* validity. Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2003) have proposed that the legal tradition of countries offers a useful means to group them. The logic of seeking generalizations in closely related settings suggests examining practices or policies within a given country as the first step in moving from the specific to the general. If something works in New South Wales but not in Melbourne, it would not be sensible to make broad claims about that policy or institution. A federalist structure, which naturally produces regional variation, increases the potential for an economy to be a model for others.

Another way to approach the configuration problem is to assume that the diverse institutions reflect some underlying latent factor, such as reliance on markets to allocate resources, that can be summarized in a thermometer style scale. The Fraser Institute's economic freedom index takes this approach, as does the Heritage Foundation's competing index. Australia rates fairly high as a "free market" economy on these measures, which suggests that it is more valid to generalize from Australia to the market-oriented economies, which include the

major English-speaking economies, than to economies further from the free market end of the scale.

Finally, the potentially most devastating limitation on generalizing from one economy to another occurs when history matters greatly in the way individuals or institutions respond to particular incentives. Since every country has its own unique history, strong path or historical dependence limits generalizations from other countries. In this case, even copying the institutions and practices of a model economy need not give the same outcomes. It is critical in comparative analysis to delimit the domains of issues where history matters heavily and where it does not, if we are to generalize from model economies.

i. Unintended Side Effects

Decision-makers want to know what works in another economy or business in order to transplant successful policies or practices to their own. But their concerns often go beyond the generalizability to the potential that a successful transplant will have possible unintended consequences. To take an extreme case, the main concern that the Chinese government has with freedom of association for workers is not the economic effects of unionism on the labour market, which might reduce inequalities and help channel social discontent in ways consistent with economic goals, but that independent unions could lead to a Solidarnosc-style union movement that would bring about democratic reforms. In a more limited area, when the US was assessing possible reforms in the labour relations system in the mid 1990s, the Chairman of the National Labor Relations Board, William Gould IV argued against EU style works council as follows:

partial transplantation (of labour practices) from a different system is a dangerous thing ... (and we) should tread warily about adopting fully systems which have been devised in the context of other legal frameworks and cultures, [for fear that a works council] would create difficulties for our system of exclusive bargaining representation status.¹³

Business and labour groups were also opposed to this innovation. Business feared that works councils would lead workers to form unions. Unions feared that councils would substitute for unions. Both felt that it was better to avoid reforms if they risked unintended effects on their interests.

Faced with a similar situation, the UK made a different decision. For years, the British Trade Union Congress had opposed works councils as an institution devised in countries whose tradition of industrial relations differed from that of the voluntaristic UK. In the 1990s, the TUC changed its views and endorsed European Works Councils and pressured the Labour government to accede to the EU Social Charter, including mandated works councils. The TUC also favoured the introduction of a voting procedure to resolve disputes over representation at work places – a transplant from the US. Management opposition to these changes was muted.

The difference between the US and UK response to the potential transplant of works councils reflects differing views about the extent to which the foreign institution would fit with existing institutions or catalyze other changes in the labour relations system. With large numbers of workers seeking but unable to gain union representation through the exclusive representation bargaining system

in the US, and with firms unable to offer non-union mechanisms of voice due to section 8(a)2 of the Labor Management Relations Act outlawing “company unions”, the introduction of works councils threatened to change radically the US’s legalist labour relations system. In the voluntarist and less contentious labour relations scene in the UK, neither management nor unions saw works councils as particularly threatening.

Generalizing from these and related cases, it would seem that two factors determine how an economy will respond to a transplanted institution: 1) the nature of the potential change – whether it could be *catalytic* to other institutions or practices; and 2) the status of the recipient economy – its *malleability* to reforms, or stability. A policy/practice that is catalytic could have a huge impact on a rigid institutional structure but only have a modest impact on a stable or malleable system. A policy/practice that is not catalytic would have no impact on a rigid system and be readily absorbed in malleable economy.

III. Australia as Model Economy

There are (at least) three areas in which Australia has made unique innovations in policy/practice and had distinctive economic experiences which could yield findings that generalize to other economies. These areas are: labour relations; use of market mechanisms to deliver public services in higher education and employment services; and economic growth through immigration and natural resources.

i. Labour Relations

‘Australia needs a workplace system geared to the future, not to the past’ – John Howard, 2005

When I first learned that Australia and New Zealand used an awards system to determine wages, I had the same kind of reaction that early settlers must have had on seeing the platypus or emu – utter disbelief. Markets are supposed to set wages, not judges on industrial tribunal court proceedings. In fact, judges aside, the Australian (and NZ) systems of awards are in the same family of institutional wage-setting as European mandatory extension systems of determining pay. These systems guarantee that the bulk of the work force is covered by collective bargaining, regardless of the proportion unionized. This is in sharp contrast to the situation in the US, Canada, Japan, or the UK, among others, where there is a near one to one relation between the proportion of workers unionized and the proportion covered by collective bargaining. Exhibit 1 shows the difference between countries where collective bargaining is extended outside the bargaining unit and where it is not extended. The horizontal axis shows the rate of union density. The vertical axis shows the proportion of workers covered by institutionally set wages. Along the 45 degree line union density and coverage are the same. Points above the line represent situations where coverage exceeds density. In 2002 Australia was far above 45 degree line.

By extending institutionally determined wages to much of the work force, awards or extension systems invariably lower the dispersion of wage. From one perspective, they accomplish what the Invisible Hand has seemingly failed to do in the job market: establish a single price for a given type of labour. From

another perspective, they compress wages excessively, reducing incentives and employment. The Australian awards system appears to be an important determinant of the effect of other economic policies outcomes. It is the main reason why equal pay legislation was more effective in increasing the pay of women relative to men in Australia than in the US (Gregory 1999; Gregory and Daly, 1991; Borland, 1999). To the extent that the various Australian Accords in the 1980s succeeded, moreover, they did so because the wage-setting system covered the bulk of the work force.

In the 1990s-2000s, Australia shifted from its awards based system of pay determination to a more decentralized pay setting system. The Australian Trade Union Congress initiated the shift by endorsing enterprise bargaining in the early 1990s. The Labour Party's 1993 Industrial Relations Reform Act strengthened enterprise bargaining vis-a-vis awards. The Coalition government's 1996 Workplace Relations Act introduced Australian Workplace Agreements to encourage individual arrangements, ended union shop type agreements in favor of freedom of association for workers and freedom of choice in the mode of wage setting (which gave choice largely to employers); and limited the authority of Industrial Relations Commission to make awards and to oversee the results from other modes of wage settlement. Comparable legislation in New Zealand produced a massive drop in union density and in collective bargaining coverage. As Table 1 shows, union density and pay setting by awards and collective bargaining also fell in Australia. But the proportion of workers covered by institutional wage arrangements remained much higher than membership, at least

through 2004. Many Australian firms and workers preferred the status quo of collective contracts and awards to the alternative of individual AWA mode of pay setting that the 1996 legislation introduced. As a result, Table 2 shows that as of 2004 twenty percent of workers had pay set by awards and 41% had pay set by collective bargaining, giving a total of 61% with pay institutionally determined.

In November 2005 the Australian government enacted legislation to further privilege individual contracts over collective contracts and weaken labour market protections that workers won from the state and/or through collective action. Under the new law, new employees could be required to sign an AWA individual contract as a condition of employment and to give up the right to be covered by a collective agreement. Enterprise agreements would no longer override AWAs and the “no disadvantage test” that requires collective agreements and individual contracts to give workers pay and conditions equal to or better than the relevant award would be weakened. The law would excuse firms with less than 100 employees from unfair dismissal laws; narrow the Industrial Relations Commission’s role in labour relations; and establish a new government body to set minimum awards over a smaller domain of issues. Finally, the new law promised to make it more difficult for unions to strike while allowing management the freedom to lockout workers. To accomplish this against the opposition of state governments, the federal government promised to nationalize industrial relations.

Are the proposed changes as radical as they appear? The government and its opponents agree that the answer is yes. A comparable change in corporate law

might be to privilege privately owned firms over publicly owned corporations by removing the limited liability protection given to shareholders, and to reduce consumer protection legislation for products made by small private firms. The changes go beyond anything that conservative governments in the UK or US have proposed. The changes are also remarkable in that government has proposed them in a period when the Australian labour market and economy are functioning well, with low unemployment and rapid accelerated productivity growth (Parham, 2004). It is not the Winter of Discontent in 1980s Great Britain, nor the US air traffic controllers striking illegally against the Federal Government in 1981.

Given the weakened state of unions, the new legislation could be the nail in the coffin of collective labour arrangements in Australia, with potential reverberations for other countries. Or it could prove that legislatively attacking the collective rights of workers creates greater political and economic turmoil than could justify such a policy. In either case, the new legislation is the sort of “natural experiment” that will make Australia the model economy for assessing collectivism in the labour market. What more could one ask for to assess how labour codes affect labour relations and labour market performance than an unnecessary extreme change in labour law? A new Australian Workplace Industrial Relations Survey perhaps to help assess the change.

ii. Market Mechanisms for Public Services

In 1989 Australia developed the world’s first income contingent mode of funding much of higher education – the Higher Education Contribution Scheme (HECS) (Chapman (2001). The HECS has many features that fit with the

predilections of economists. It differentiates prices by field, gives students the option for paying fees up-front; offers a more equitable way of funding student education than taxing citizens to pay for the education of the future elite; is less risky for students than loans; and gives greater autonomy to universities. The government's partial deregulation of the higher education system allows universities to determine the student contribution amount within the specified ranges.

Shifting the cost of higher education from the state to students has helped Australia to increase university enrollments while reducing state funding of higher education relative to GDP (Marginson, 2001, table 1). In addition, the market orientation of Australian universities has led them to become world leaders in selling undergraduate education to the citizens of other countries, further increasing their revenues. There is no evidence that the HECS has discouraged low income students from going to universities or reduced the overall rate of university attendance. While the system has problems – student-faculty ratios have risen and faculty earnings have fallen relative to other groups, raising issues about quality – Chapman's assessment is that the income contingent charge for higher education has worked. No one has made a cogent case rejecting this assessment. Given the seeming virtues of the system, the interesting question is why other countries have not copied the Australian model. If detailed data on the system were readily available on a web site, including university by university records and surveys of students, analysts in other countries would download the information and perform the types of studies that would fit their country's

concerns, and thus spread this innovation.

It is not only in provision of higher education that Australia has been a world leader in marketizing government-funded services. In most countries, the state aids unemployed job seekers through assistance in job finding, training, and other active labour market policies. Until recently, some European countries restricted private employment agencies so that the state had an effective monopoly in many employment services. In 1998 Australia chose a different route. It privatized or outsourced employment services to non-profit and profit-seeking agencies, as well as to competing public agencies – ‘a radical transformation of employment service delivery ...without parallel in OECD countries’ (OECD, 2001, p 15). By opening the market for employment services to competitive bids, with the bulk of payments based on a fixed fee for successful placement of the unemployed, the Australian policy potentially unleashed the forces of competition on what had been an administrative function of the government. The result was a large drop in the cost of employment services, with no apparent loss in the quality of services (Shergold, 2002), which impressed the OECD in its review of Australian labour market policies (OECD, 2001). However, the program has yet to receive the scrutiny of the microeconomic evaluation research community, with specified counter factuals to assess outcomes (Dawkins, 2002) and detailed studies of particular programs. As a result independent researchers have taken a more skeptical view (Webster and Harding, 2001; Oslington, 2005) than the OECD, withholding judgment until data from providers of services are open to public scrutiny. Webster and Harding note

that the public sector had higher labour productivity than the private sector in placing workers under the predecessor Working Nation program (Webster and Harding, p 240), which raises questions about what underlies the cost savings of the new program.

To make a scientific case for the Australian model of market-driven government funded employment services requires two detailed research investigations. The first needed research is random assignment experiments comparing the effectiveness of different services (Webster, 1998; Burtless, 2002). Since Australia changed the entire system, with multiple service providers offering different services in different ways, a random assignment study of the full change is impossible. Still, the government and agencies can undertake analyses of some services, which would enable them to decide what is working and what is not, and thus improve the system. The second area where research could greatly illuminate the Australian model is in the newly developing market for contracting out employment services. The outsourcing of public employment through a market mechanism offers a unique opportunity to examine the organizations that enter and exit the market, the quality of services provided by different government, private and community agencies, and the way in which these organizations respond to winning or losing contracts. The results from such a study could generalize to other markets where governments are considering outsourcing provision of public goods.

iii. Growing Oz: Immigration and Natural Resources

As a “settler economy” Australia has grown through immigration and the application of modern technology to extract natural resources and to the development of agriculture. Since not all settler economies have been economic successes – Argentina is often viewed as Australia’s errant twin economy in this respect -- and since natural resources have proven to be as much of a curse as a boon to an economy (Sachs and Warner, 1999; Ross, 1999) -- Australia’s success in growing through immigration and escaping the problems of a profitable mining sector make it a model for other resource intensive economies.

On the immigration side, in 2000 approximately one fourth of the Australian population were immigrants – twice the proportion in the US and thirty percent more than the proportion in Canada.¹⁴ The flow of immigration into Australia was above the flow into the US, despite the US’s massive increase in immigration over the 1990s. The only other advanced countries with comparable flows of immigrants are Israel and New Zealand. With immigrant flows of these magnitudes, the effects of immigration invariably go beyond the micro-economic issues that dominate the bulk of the literature in the US and most other OECD countries – how immigrants fare in the labour market compared to natives and how immigrants affect native substitute workers. Australia is a model economy for understanding the impact of immigration on macro-economic outcomes and economic growth, and of the economies of scale and the composition of immigrants that help determine aggregate effects (Junankar, Pope and Withers, 1998). While there is no definitive analysis of the potential scale economies from immigration (OECD, 2003), evidence that immigrants have had little

adverse effects on the wages or employment of natives (Chang, 2004; Addison and Worswick, 2002), that growth and immigration, particularly of skilled workers, are positively related over time (Pope and Withers, 1995; Nevile, 1990) and the country's policy of selecting immigrants on the basis of labour skills, are consistent with the notion that immigration contributed to growth per capita rather than detracted from it.

Going a step further, Australia's variations in policy for selecting immigrants itself that provides lessons for other countries. Until the early 1970s, the country subsidized passage for Europeans from some countries. Since then Australia has used a point system to encourage immigration of skilled workers (Miller, 1999) By 1989/90 52% of Australian immigrants came as skilled workers compared to 39% of Canadians and 8% of Americans (Antecol, Cobb-Clark, Trejo, 2001, table 2). Australian gives points to persons who attend Australian universities, which presumably both attract students to Australian universities and encourages their immigration. The Longitudinal Survey of Immigrants to Australia provides data that goes beyond standard Census and labour force survey data on immigration to deal with issues of assimilation and career progress (Chiswick, Lee, and Miller, 2005).

On the natural resources side, Australia has developed economically despite being highly dependent on minerals/fuels and agriculture for the bulk of its exports. The country fell from near the top of the GDP per capita league tables – 5th in the OECD in 1950 to a much lower position – 15th in 1990, but rebounded in the 1990s with a sustained period of economic growth to reach 7th

spot in 2003. The Gregory ~~thesis~~-curse in which a booming mining/natural resource sector where relatively few people work boosts the real exchange rates and erodes the competitive position of other exporters, notably in manufacturing where many people work and in agriculture, where many people once worked, has somehow not prevented Australia from growth and prosperity. Indeed, the mineral share of exports rose during the 1990s period of rapid growth so that in 2004, minerals/fuels made up 40% of Australia's exports. If China continues to become the manufacturing center of the world, more countries may find that natural resources will be more important to economic growth than in the past, and should look to the Australian experience here. If there is one area where the rest of the world needs to learn more about Australian experiences, it is how the country has managed to avoid the resource curse (McLean, 2004; McLean and Taylor, 2003; Anderson, 2001).

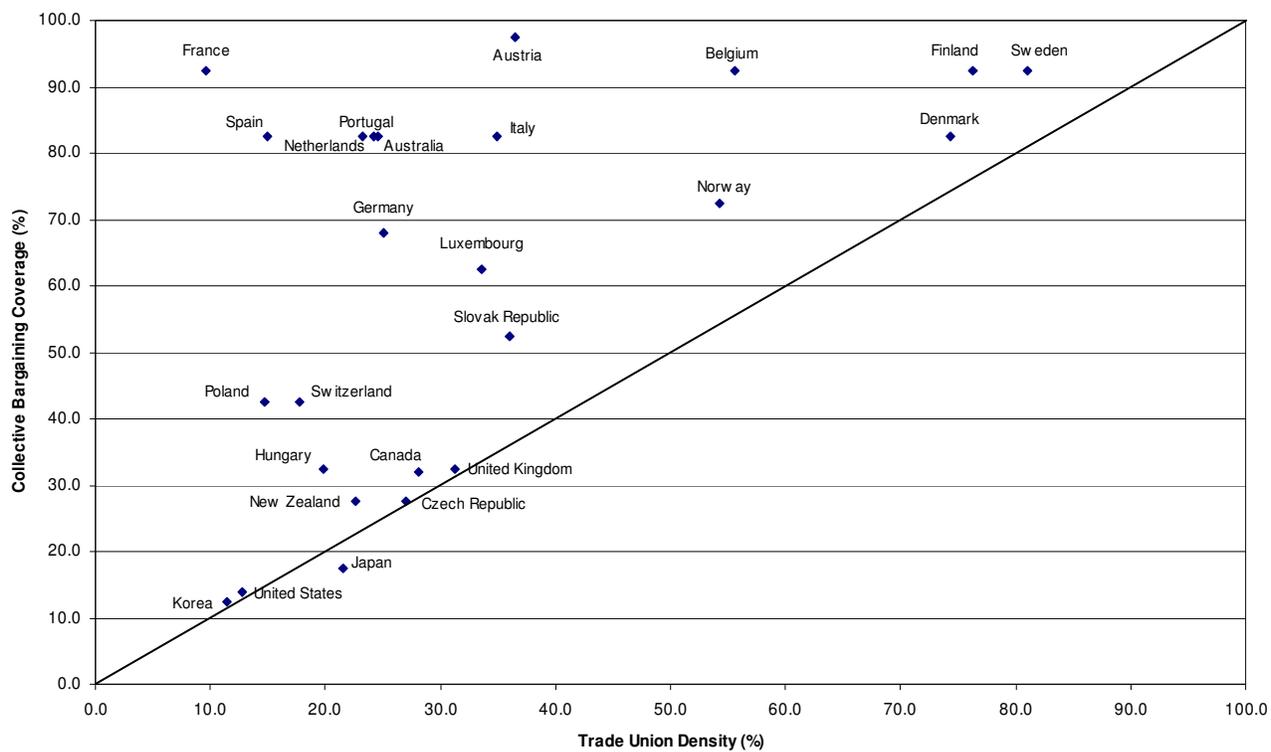
IV. Conclusion: The Advantage of Home Brew

The argument that economics has much to learn from behaviour in "model economies" just as biology learns from model species directs attention at the variation in policies and practices in economies regardless of location. The requirements for a model economy are adequate data; a knowledgeable set of home grown economists; interesting variation in policies/practices; and sufficient similarity to other economies to allow findings to be generalized. In addition, model economies can provide independent tests of models initially fit on other economies, where specification search (Leamer, 1978) risks over fitting the data

to match the idiosyncrasy of that country's experiences. Because no single economy offers the best variation/instruments for studying more than a few issues, there is space for more model economies than model species.

Australia's unique policies and practices and accessible data make it a model economy for illuminating the critical issues summarized above and potentially others as well. The country's political system seems adept at creating extreme policy experiments that will illuminate economic issues for the foreseeable future, particularly in the direction of greater reliance on markets. As a result, there is a lot the "real world" can learn from Australian experience – as Bob Gregory has done throughout his career. The one thing Australia could do to enhance the economy's status as a model system would be to make Australian data more readily available over the Internet to international researchers. Because interpreting data requires tacit knowledge about an economy – home brew that is easier for residents to imbibe than overseas scholars --Australian economists will almost certainly maintain an edge in analyzing these data. Such provision would more likely raise than lower demand for their services. Imagine, more economists joining Bob and the cork hatted gang at the pub to ponder what's going on down under and what it means for economics and the real world. Home brew and economics. Sounds good. Who needs cricket and Aussie rules football and all that?

Exhibit 1: Union Density and Coverage, 2000
 Percentage of Wage and Salary Earners



Source: OECD Employment Outlook 2004, Chart 3.4

Table 1: Percentage of Workers in Unions and Percentage Covered by Collective Bargaining, Australia and New Zealand, 1980 to 2003

	Australia		New Zealand	
	Union	CB	Union	CB
Before Legal Changes, ~1980	48	88	56	67
The Changes: 1991 NZ Employment Contracts Act: 1996 Australian Workplace Relations Act				
2000	25	60	17	20
2002	23	59	17	18
2003	23	58	17	17
2004	23	58	--	--
Before to After Changes	-25	-30	-39	-50

Source: Australian Bureau of Statistics (May 2004, cat no 6306.0); Australian Bureau of Statistics (August 2004, cat no 6310.0); Harbridge, et al (2003); May, et al (2003).

**Table 2: Percentage of Workers With Wages Set by Specified Mechanism,
2004**

Mode of Wage-Setting	Percentage Covered
Awards	20
Collective bargaining	41
Individual	34
Proprietors/	5

Source: Australian Bureau of Statistics (May 2004, cat no 6306.0).

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Endnotes

1. The Scientist, vol.17, supplement 1 June 2, 2003 Biology's Models (www.the-scientist.com/yr2003/jun/) discusses the “eight most used and most useful” model organisms. The article “model organism” in Wikipedia (<http://en.wikipedia.org>) gives valuable references and another list of model organisms. Also, see www.wellcome.ac.uk. NIH gives references to model organisms for biomedical research. ([Www.nih.gov/science/models](http://www.nih.gov/science/models))

2. See Mandoli and Omstead (2000), Kellogg and Shaffer (1993), in addition to the articles cited in footnote 3. Fields and Johnston (2005) ask whether new technologies for analyzing gene function will obsolete model organism research and conclude that they will not.

3. This gives an edge to small creatures that are plentiful in the environment, that reproduce quickly, and that have readily discernible attributes or behaviour.

4. A model organism “must not only be convenient to work on, but it also has to be related to other things that are useful”– John Sulston, cited in www.welcome.ac.uk/en/genome/genesandbody/hg05f003.html, p 2

5. Once many scientists work on a given species and develop protocols for experiments, isolate mutants, sequence its genes, the cost of research falls, which attracts others. Still, model organisms are not fixed in number. Innovators have turned previously ignored species into models by making important discoveries from analyzing that species. And new technologies can expand the model species to more complex creatures (Fields and Johnston, 2005).

6. Paul Joskow, California's Electricity Crisis (MIT Sept 28, 2001)

<http://web.mit.edu/ceepr/www/2001-006.pdf> is the most cogent economic analysis. See

http://www.erisk.com/Learning/CaseStudies/ref_case_californiacrisis.asp for a time line

7. http://www.usdoj.gov/usao/can/press/html/2004_08_05_forney.html gives the details of the plea bargain by James Forney, who devised the “Death Star”. Forney was the third conviction the US Attorney's Office obtained in its investigation into the illegal manipulation by Enron of California's energy markets from 1999 to 2001.

8. Nature did not “completely reinvent the wheel and come up with a new set of molecular rules for each phylum” Thomas Carew, a specialist in the mollusk *Aplysia californica*, cited by D. Steinberg, “Illuminating Behaviors”, *The Scientist*, vol 17, supplement 1, June 2, 2003, p1.

9. <http://usinfo.state.gov/gi/Archive/2005/Sep/01-272693.html>. The estimate has varied over time, due to the subtleties in making such comparisons.

10. If advanced countries thought policies were readily transportable from developing countries, they would presumably fund policy experiments in those countries, draw lessons from the experiments, and then import the successes.

11. Studies of labour practices find that firms need a bundle of advanced human resource practices to create a high performance workplace (Ichniowski, Shaw, Prenzushi, 1997).

12. With four institutions/practices and the 0/1 measure of their state, there are $2^4 = 16$ possible configurations to investigate before deciding on the best course of action. With six institutions/practices, there are 64 possible configurations. And so on.

13. William Gould IV, Chairman, NLRB, Sept 29, 1994, reported in Commission on the Future of Worker-Management Relations.

14. In 2000, 24.6% of Australians were immigrants compared to 12.4% of Americans and 18.9% of Canadians. The ratio of annual immigration to the population in Australia was 0.51% compared to 0.45% for the United States.