Reference: 20160099

THE TREASURY
Kaitohutohu Kaupapa Rawa

26 April 2016

Mr Michael Reddell
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Dear Michael Reddell

Thank you for your Official Information Act request, received on 6 April 2016. You requested:

> *"a copy of a paper released by Treasury, as part of its Economic Transformation series, in 2001 called "Growth and policy in other countries: lessons from the losers".*

Information Being Released

Please find enclosed the following document:

Item	Date	Document Description
1.	31 October 2001	Growth and Policy in other countries: lessons from the losers"

Please note the paper does not reflect an official Treasury view. The paper presents the author's personal perspective on issues relating to the economy, and was written to influence debate, discussion, and broader thinking by Treasury staff. It was uploaded onto the Treasury website as a preliminary draft and was not finalised.

Please note that this letter (with your personal details removed) and the enclosed document may be published on the Treasury website.

This fully covers the information you requested. You have the right to ask the Ombudsman to investigate and review my decision.

Yours sincerely

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LESSONS FROM THE LOSERS: WHAT THE ALSO-RANS CAN TEACH US ABOUT ECONOMIC PERFORMANCE

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DRAFT - 31 October 2001

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1. Introduction

This seminar draws out a number of key lessons for New Zealand policy from an examination of comparator countries and regions. These comparators are either countries who have experienced prolonged poor economic performance, or countries who have managed to turn around a poor track record.

I would like to thank Claire Gardiner and Geoff Simmons for extensive research and analytical assistance.

2. Who to Compare With?

Typical commentary comparing country experience notes one or more policies pursued by a currently booming economy and then argues that the same policy setting needs to be pursued in New Zealand. Often the analysis is simplistic and chooses comparators that have little in common with New Zealand.

An alternative – and perhaps more fruitful – route is to examine the performance of economies which (like New Zealand) have not done well. These countries can show us which policies don't seem to work, and the experience of those countries who have pulled their socks up may tell us what prerequisites are required for policies to be effective.

Ideally the comparators should be:

- Of small market size
- Peripheral to major markets
- Have an important agricultural sector

In addition, since we are dealing with developed economies, they should have:

- A well-educated populace and
- A democratic political system

I have chosen eight comparators. Four have experienced disappointing economic performance over a prolonged period of time:

- Uruguay
- Switzerland
- Tasmania
- Atlantic Provinces of Canada

A word on each of these to make the point:

- In the 1950s, Uruguay was known as the Switzerland of Latin America and had per capita income similar to that of Denmark or Belgium.

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- While still one of the richest countries in the world, Switzerland has the unenviable record of having the worst growth performance in the OECD since the 1970s and registering zero per capita growth for the decade of the 1990s
- Over the 1990s, Tasmania grew at under half the rate of the rest of Australia and while Australia's population increased 3.4%, Tasmania's declined by 0.7%
- Canada's Atlantic Provinces have unemployment rates up to double the Canadian average and have per capita incomes around 69% of Canada's as a whole.

Another four have gone through very difficult periods but have moved on to become some of the richest economies in the OECD. These are:

- Denmark
- Finland
- Iceland
- Ireland

To explain the economic performance of one country is challenging. To fairly summarise the experience of 8 is impossible. So to make the task tractable, I have chosen to draw 7 broad lessons out of the material and provide fragments of country experience to support the broad points being made.

Lesson 1: Losers Can't Be Saved

There is no growth without macro stability. A prolonged period of poor performance with low revenue growth and rising social expectations will ultimately undermine the fiscal position and lead to macro instability. This is the story of Uruguay. Underlying economic structural failures were papered over largely by increasing the role of the state either through direct employment or by the payment of benefits. "Uruguay is the only office in the world that has reached the status of a Republic". As the fiscal burden become too great, the authorities resorted to the use of the "inflation tax" beginning a prolonged period of economic stagnation. This is of direct relevance to New Zealand's history in the 1970s and 1980s.

Currency union is also no panacea. The experience of Tasmania and the Atlantic Provinces of Canada suggests that the benefits of currency union are not sufficiently great to support growth. Ironically, in the sample it is countries like Iceland and Denmark who have stood apart from common currency arrangements that have exhibited better performance.

Too close a union may simply assist the outflow of economic factors. Emigration is the scourge of the non-performers. Within the top world economies of Australia and Canada, the region of Tasmania has suffered a loss of 4,000 since 1996 and Atlantic Canada 6,000. Poot (1995) shows that despite free movement between NZ and Australia, national borders still matter. Tasmanian emigration to the mainland responds more closely to

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economic opportunity than New Zealand emigration to Australia. Removing national barriers could simply speed factor exodus.

A good dollop of fiscal transfers will disappear without trace. Some argue Irish success came in part from EU transfers (3.8% of GDP between 1989-93). Except that our friends Tasmania and the Atlantic provinces show just how ineffective even massive fiscal transfers can be. In both cases federal transfers make up over 10% of the provincial GDPs, and at one stage over a third of Atlantic Canada GDP represented transfers. Some argue that such transfers have hindered rather than helped:

- High benefit payments raised wages above equilibrium, leading to persistent unemployment
- A higher wage structure led to lower investment and falling labour productivity
- Subsidies for creating work provide little incentive for innovation and productivity improvements
- Subsidies to the fishing sector led to over-fishing and the destruction of the industry (cf Iceland's successful management of fish)

Industry policy also doesn't seem to do the trick. Much of the fiscal transfers have been used to fund infrastructure, but this does not seem to have stimulated growth. Tasmania and the Atlantic Provinces have sought to offer inducements to large firms but have found that firms that are prepared to come are also prepared to leave. For example, between 1990-95 in Atlantic Canada, there was a net reduction in firms employing more than 5 people. Atlantic Canada has developed a world leading IT infrastructure across the region since 1995 and this has yet to show discernable benefits. And of course, when you are funding the industry policy yourself, it can get expensive. Ireland spent a cumulative total of $US1.5 billion on grants to industry over the 1980s. In short, encouraging businesses to move to your country can be very expensive, and the hard part is getting them to stay.

Lower cost structures are not enough either. Both Atlantic Canada and Tasmania have undergone cost competitiveness studies comparing themselves to US states and the rest of Australia. On most dimensions of cost (wages, regulations, taxes, land prices) our loser economies were more cost competitive than the comparators.

In sum, the experience of countries like Uruguay and entities like Tasmania and Atlantic Canada tell us that once you are gifted the "loser economy" tag, there is no single policy (or even groups of policies) that can easily reverse this decline. This includes policy settings whose costs are infeasible for are small sovereign state. It also suggests to beware the snake oil merchants who promise prosperity on the basis of this or that policy change. A raft of major initiatives in these economies has had little lasting effect.

On the other hand, the experience of countries like Iceland and Ireland that have every right to be in the loser camp suggests that sustained poor performance is not inevitable and is subject to change. This suggests that the path of economic growth is much more complex than many believe.

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Lesson 2: Don't Just Blame Size and Distance

There is no question that New Zealand's small size and its remoteness from markets has not helped its economic performance. But I think there is a lot more to explaining our poor performance that this. In the 1990s, the EU countries that did the best were either small (Netherlands), peripheral (Spain) or both (Finland, Ireland).

First, I think we need to be clear on what we mean by these terms. Even "distance" is not at all clear. On the one hand it may be some kilometre measure but equally important are concepts of social distance. Just like Irish-Americans have chosen to invest in Ireland, it is no surprise that the UK continues to be one of our more important trading partners. The point is that although kilometres may be clearly against us, other concepts of distance (an English-speaking, immigrant community) can ameliorate these effects.

Even if pure physical distance is that significant, I cannot explain the rather good performance of not only Iceland, but also of Australia, Singapore and Japan. And proximity also has its own perils. One of the explanations for decades of poor Irish growth was that it was too close to the UK with its low productivity record. Similarly, not too long ago it was argued that CER was a mistake because this would mean locking us into the basket-case economy of Australia.

In terms of size, we need to be clear about what we mean. I can see three at least three concepts of "size":

- The size of firms
- The size of clusters of similar firms
- The size of the domestic market.

I am not persuaded by small firm size. There are notable examples of successful economies with large numbers of very small firms, Italy being the best example. Indeed, Finland frets about the lack of small firms and its excessive dependence on a small number of large firms.

There probably is something in the cluster concept. Clusters are evident in Ireland and Finland, while in Denmark there are important clusters of furniture and radio communications. Clusters seem to enable groups of firms to overcome any scale problems that they may face in their industry (e.g. difficulties in exporting or engaging in R&D). But it is not all one-way traffic here: it has been argued that spatial concentration in Scandinavian countries has led to upward pressures on wage structures. The Swiss have argued that one of the benefits of a more spatially diversifies economy is less opportunity for lobbying activity.

The size of market is clearly important. A small country is unlikely to get rich selling lamb shanks to itself. But market size is only a constraint to the extent that physical (and psychological) borders are important. This is just another way of saying that you are either on the international bus or off it. I'll come back to this is a minute.

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But first, let me deal with the obvious things. Every growth study I have ever seen talks about the importance of human capital and of technology. Perhaps this is what links New Zealand to the losers.

Lesson 3: We Spend A Lot On Education and Training But Do We Get Results?

The international literature on growth routinely picks up the importance of human capital. There is a clear gap between the rich and poor countries. While Uruguay pioneered free, universal education in Latin America and still maintains literacy rates near 100%, it has been unable to continue to finance educational enhancements. For example, only 80% of secondary age children attend school.

The good news for New Zealand is that basic educational indicators suggest that we are doing relatively well. Public expenditure of education to GDP is higher here than in all comparator countries except Denmark. In terms of educational attainment we out-perform countries like Finland and Ireland. Other data around entry rates into tertiary education and job-related training show New Zealand to be a world leader.

However, there does appear to be a more marked bi-polar distribution in New Zealand compared to other countries. For example, data on document literacy shows a substantial of New Zealanders performing at a poor level – above Ireland but well below countries like Finland and Denmark (and the moribund Swiss are not too far ahead of us).

Moreover, survey data shows some disquiet as to whether the education system meets the needs of a competitive economy. The Swiss, Finns, Icelanders, Danes and Irish all fall in the top 11 slots of the survey, while New Zealand languishes at 27. On a more objective basis, data shows that engineers represented around 6% of New Zealand graduates. Countries like Switzerland and Denmark at least double this proportion, while Finland quadruples it.

In short, the aggregate data around education and training could lead to a relatively sanguine view around human capital. However at a more disaggregated levels there are more worrying questions about how effective the education system is at bringing the whole population into the fold and whether the structure of the education system is sufficiently directed to growth-oriented activities.

Lesson 4: Technology-Driven Productivity Growth Went Out With The Tech Bubble

The other standard wisdom on growth is that technology matters. In a reverse of our education and training record, New Zealand's performance looks horrible overall, but masks some quite good stories.

Let's get the horror stories out of the way. Spending on R&D is low compared to other OECD countries and low compared to Iceland, Denmark, Ireland and especially Finland. An interesting fact: Nokia in Finland spends over twice as much on R&D as all of New

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Zealand put together. The most striking thing about New Zealand is how little R&D occurs in the private sector – business R&D is about one-fifth of the OECD average. The flip side of this is that New Zealand has an extraordinarily high proportion of government financed R&D, with around two-thirds of all R&D being undertaken by the government or universities. In short, you have a private sector that doesn't do any R&D and a government sector that thinks the best way to help is to do all the R&D itself. It is hardly surprising that New Zealand ranked 24th in transferring technology between universities and companies, compared to Finland ranking 1, Ireland 5 and Iceland 10.

The New Zealand data looks pretty bleak at first blush, but the situation is much brighter about the use of technology. Here New Zealand compares well. Indicators such as computer power per capita, internet connections per capita and the low cost of internet access, New Zealand is near the top of the pack – typically behind countries like Iceland, Denmark and Finland, but well ahead of Ireland (and neck and neck with the Swiss). In terms of readiness to make use of electronic commerce, New Zealand is in the top bunch with regard to the number of secure servers per inhabitant.

While there is no doubt that R&D has assisted Finland and Denmark to do well, this is not a prerequisite for success. There are good reasons why small countries will not be R&D intensive:

- Technology is risky; an R&D intensive strategy may back the wrong horse
- R&D is very costly so that only the largest firms will be able to undertake it
- A small domestic labour market will constrain the amount of R&D undertaken
- Technological spillovers are likely to benefit other countries as much as residents.

New Zealand does not appear to undertake much R&D, but seems to adopt technology quickly and be well placed to use it for business growth. In this sense, the New Zealand experience is much more like that of Iceland whose R&D efforts are necessarily modest, but whose use of technology is well up with the top of the world. In other words, while undertaking research and providing new products can be important for some countries' growth, there are other successful paths as well. But like anything, technology is no panacea: the Canadian Atlantic Provinces are about as "wired" as anyone and this seems to have had little result. And the Swiss score just as well or better on technology indicators as the most successful economies, but don't seem to have turned this into growth.

In sum, New Zealand rates poorly on probably the most important indicator – business related R&D. However, the links between R&D and economic success are not clear – R&D hasn't helped the Swiss while Iceland has prospered without it.

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Lesson 5: You Are Either On The Internationalisation Bus Or Plugging Through the Mud

There may be elements of human capital and technology that are linked to economic success, but these alone do not seem to explain New Zealand's malaise. Is there anything more robust that comes out of international comparison?

One factor that does seem to separate winners and losers is integration into the global economy. Crude measures of openness such as export to GDP ratios do point to the better performers being more open. Uruguay has a strategic location in South America and yet exports only 19% of GDP; at the other extreme is Ireland, which exports around 88% of GDP. In particular, it is the rate of growth of exports over past decades that seems to be associated with growth. This is hardly surprising given the fact that world exports have grown at over twice the rate of global GDP since WW II. Countries like Finland, Ireland and Denmark have increased the share of exports in their economies by 10% or more since 1970.

New Zealand's export performance has been weak. While we have increased our export share by around 9 percentage points since 1970, we export only around 32% of GDP which is low for a small (and allegedly open) economy. But a bit of care is required in making too sweeping judgements. While New Zealand appears to be a (negative) outlier in terms of the share of exports compared to country size, so too is a highly performing economy, Iceland. And Iceland's export to GDP ratio is around New Zealand's level and has actually fallen in recent decades.

Part of the reason for this relatively poor performance may reflect underlying economic factors such as terms of trade shifts. But both Iceland and Finland have experienced marked terms of trade shocks yet this does not seem to have caused them sustained economic stagnation.

Probably more important is the role of the real exchange rate. One of the striking things about looking at the economic history of Denmark, Iceland, Finland and Ireland is just how non volatile the real exchange rate has been over long periods of time and how this has supported economic growth. While there have been fluctuations in this measure, the volatility and the magnitude of the cycles has been markedly greater in New Zealand compared to these countries. For example, from 1984 the Irish real exchange rate moved in a 16% point band, while the equivalent New Zealand figure was 36%. I see this as one of the key reasons why our export performance has been relatively weak compared to more successful economies. While more extreme than in New Zealand, the experience of Uruguay and the Southern Cone countries shows that an upward appreciation of the real exchange rate can undermine a reform programme and prevent a country from getting out of a low growth trap. On the other hand, Denmark is a case where a real exchange rate adjustment was effective in allowing it to undertake a very major fiscal contraction without a loss in output.

Internationalisation is not just about trade. More important are the attitudes that underlie the economic statistics. It can be a long haul before positive attitudes toward globalisation are translated into economic success. For example, Ireland adopted an externally focussed strategy in 1958 emphasising the importance of trade liberalisation and FDI.

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Getting a handle on this sort of information is difficult. While it is important to take survey data of the International Competitiveness Survey of 49 countries with a grain of salt, this data does suggest that New Zealanders feel threatened (rather than empowered) by globalisation. Comparing NZ with Denmark, Finland, Iceland and Ireland:

- NZ saw globalisation as a threat (31); comparators were all in the top ten as being not a threat
- NZ saw threat of the brain drain (46); comparators are in the top half of brain drain not being a threat (except Denmark at 26)
- NZ saw the threat of relocation of production (41); comparators saw no threat at all (except Ireland at 28)
- NZ saw a threat of R&D being relocated (43); comparators are in the top ten of non-threat.

Such surveys need to be treated with care – results can vary through time and through the economic cycle. But what is clear is that New Zealand is hardly at the cutting edge of seeing the advantages of globalisation and this may well influence our longer run performance. These concerns were echoed by Fran Wilde in last week's Dominion – she feels New Zealanders need to learn the importance of internationalising the economy. Also of interest, is that Switzerland's long period of poor economic performance is reflected in these surveys. While the Swiss are certainly not as negative as New Zealand's, under none of the above categories do they score on the top 10.

In sum, the degree to which a small economy grasps internationalisation will largely dictate its rate of growth. We tend to think of ourselves as open, but raw export data as well as more attitudinal based material questions this. Combined with a variable real exchange rate that has discouraged the movement of resources to the tradable sector, it is hardly surprising that our rate of growth has lagged others. I would hope that improvements in our monetary framework may resolve the real exchange rate issue, but I am much more pessimistic about New Zealander's attitudes to the world.

Lesson 6: Social Consensus Matters

A crucial lesson that does appear to come out of the countries examined is that social consensus matters. By social consensus, I do not mean agreement on all matters. Rather I mean the existence of mechanisms that allow social choices to be made without tearing apart the fabric of the society. Equally important is the ability of a country to be able to make painful choices when required.

In principle, this is one of the merits of being a small country – social choices are easier to make as:

- Coordination is easier in a small population
- The population is more likely to be homogeneous, have a shared identity and develop trust relationships.

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But small countries can also find it difficult to reach consensus on a vision for the country. The clearest example is Uruguay. As vested interests became entrenched, it proved impossible to undertake policy changes that were required as a result of a weak economy. Eventually, this led to the Parliament becoming ineffective, competing social claims spilling over into near civil war and a takeover by the military.

While extreme, the underlying tensions do appear to be present in other poorly performing economies. For example, my observation of Tasmania is of a very deep social split between the traditional resource-based development lobby and the "green" conservationists. I gather that the situation is similar in Atlantic Canada. It is hard to see how these jurisdictions can really undertake far reaching strategic policy decisions that will provide an underpinning for sustained growth. In the same camp, I see Switzerland. This country has been rich for so long that there are major impediments to a change in approach, despite the increasingly obvious fact that the world has moved on without Switzerland. I cannot help but wonder whether these deep social fractures from both Tasmania and Switzerland are also present in New Zealand. From Jas McKenzie's presentation last week, it is clear that New Zealand did **not** have this consensus in the 1970's and 1980's, which meant we could not quickly adjust to the shocks of the time.

On the other hand, the economies that have picked themselves out of the loser category uniformly have very strong social consensus. Quite a bit of caution is required here – if only because many of the "winners" are Scandinavian long famous for their inclusive economies. However, what is striking is the degree to which these countries have a widely shared vision. The success of Ireland is in no small part due to the fact that by the 1960s there was very widespread agreement on the need to promote economic growth and the broad means (FDI and the EU) to get there. Similarly, Iceland has been very effective in recognising the important of cod (and a couple of other things with fins) to the economy, managing this resource and sharing both the gains and losses of volatile prices throughout the economy. And those pragmatic Finns have a course for new politicians on economic policy to help forge a shared view on economic issues.

Equally impressive is the ability of these economies to respond to crisis without undermining the basic social vision. In the early 1980s, Denmark pulled off the remarkable feat of undertaking a fiscal contraction of 12% of GDP in four years without a loss of national output. Finland experienced the greatest recession experienced by an OECD country since at least the Great Depression (a loss of 13% of GDP in the early 1990s), yet became the success story of the late 1990s.

One possible part of the reason for this success in these countries is various forms of social protection resulting in strong income equality. For example, while Finland's output fell 13%, household incomes fell only 7.5% allowing the severity of the shock to be absorbed. While the data is fraught with problems, in terms of income distribution New Zealand looks much more like the US or a number of Latin American countries rather than other OECD nations. This may be part of the reason that New Zealand finds it difficult to make painful adjustments as the cost of those adjustments are met less evenly than in other OECD countries.

Of the countries studied, the importance of social consensus does appear to be the strongest lesson. Of course, there may well be a causation problem: high performance countries are likely to have high levels of consensus. But these countries appear to have

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maintained consensus when things were going bad. The ability of some of theses countries to weather quite extreme shocks and rapidly regain the path to income growth, combined with the steadfast approach of the Irish pursuing the same goals for decades does suggest to me that there are real advantages in having a uniform vision for the country's development.

Lesson 7: Are Individual Interventions Effective?

Well, noone will be surprised to know that the county experience really doesn't isolate interventions that uniformly seem to work. If there is a lesson here, it is simply that some interventions seem to work well in some circumstances; in other circumstances the same interventions are a disaster. Here are a few candidates:

The Size of Government Doesn't Matter

Denmark and Finland have the dubious distinction (along with Sweden) as having the largest government sectors in the world, (Denmark well over 50% of GDP; Finland just under). On the other hand, Iceland has a much lower ratio of government spending and still appears to do well (while New Zealand and Switzerland have similar ratios and have performed poorly). Of course, what is important is the quality of that expenditure. So jurisdictions with large budgets (Tasmania and Atlantic Canada) can do badly, as can countries with low expenditure ratios (Uruguay).

Centralisation Isn't All Bad

The Irish and Icelanders have taken very hands-on approaches to economic development and seem to have made it work.

Centralisation in the labour market can be rather successful. Iceland has the highest rate of unionisation in the OECD; Finland and Denmark are not far behind. It is not the structure of the labour market that is important, but how effective that labour market is in adjusting the economic shocks. Denmark achieved its fiscal adjustment as part of an agreement with unions and employers. Ireland held its real wages down by negotiating a "Programme of National Recovery" that provided tax reductions for wage limits. On the other hand, it was the inability of Uruguay's highly regulated labour market to effect necessary real wage reductions that began the prolonged economic crisis. Similar claims could also be made about New Zealand's problems in the 1970's and 80's.

FDI Can Help

The Irish experience with FDI does appear to have been very successful. FDI in Ireland has been highly productive and resulted in a 40% fall in unit labour costs 1980-95. But promoting FDI can be very expensive, and is a highly competitive market to enter. Ireland spent 3% of GDP 1983-86 promoting industrial development, around one-eighth of all industry value added. And Tasmania and Atlantic Canada's experience should tell you that there is no panacea here. Getting FDI is tough, keeping it is harder.

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Public Infrastructure Investment Can Be a Waste of Money

Irish public investment was around 30% of GDP over the 1970s and was consistently higher than in the UK and Europe, yet seemed to generate no gains. Since that time, public investment has halved. Around the time public investment halved in the late 1980s, Ireland began to boom. The story here is about the quality of public investment – much of Irish investment was in the transport sector used to provide grants to loss-making air, rail and sea carriers. Ireland as a result had the lowest output return per dollar invested than any country in Europe.

Is There Anything To Be Learned?

So what are the main points coming out of looking at a bunch of losers for New Zealand? I think there are five areas:

The main themes in the growth literature are not the single "key" for New Zealand. While it is easy to fault both our education and training and our generation of technology, in broad terms we are in the pack. We are certainly well above countries like Uruguay that are well behind us in the development race. There are certainly areas for improvement – notably in assisting the most disadvantaged in education and making education more relevant to business. But these are unlikely to be the sole policy initiatives that will get us onto a higher growth path.

There is no one path to sustained growth. The experiences of Finland, Denmark and Ireland tell you there is no single formula to get rich. The Irish path is rather dirigiste with heavy involvement in industry assistance. The Finns have emphasised technology and the role of the state in supporting research. The Danes have chosen a path that combines quite a liberal economic policy framework with high levels of social protection. Just as importantly, all these paths (especially Ireland's) have been tried in places like Tasmania and Atlantic Canada and have largely failed. This suggests to me that it is not the policies themselves, but a lot about the structure of the economy and the social attitudes in it that matter. If policies are important, subtler tools seem to be the key, such as the interface of education and research policies with the private sector.

The ability of the economy to adapt to shocks is critical. The economy needs institutions that can help this adjustment, such as the ability for the real exchange rate to move, the ability to adjust real wages and the ability to compensate losers for economic dislocation. These institutions may be quite different in differing contexts – it they may be highly rigid or very deregulated labour markets. But they must have the capability to react and adapt to economic shocks as they arise. More important is the willingness of society to use those institutions to undertake change. There is no point having a labour market capable of transmitting shocks if participants refuse to allow the shocks to flow thorough. This underlines the importance of social consensus and a shared vision.

In a world of mobile factors of production, *it will be the non-mobile factors that become important for maintaining growth.* Falling transport and communication costs mean that access to most factors of production will have increasingly less impact on growth. It will be access to non-mobile factors that will provide competitive advantage. The non-mobile factors are labour (at least to an extent) and social institutions. Institutions such as trust

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cannot be copied or transported and so it is the quality of these underlying institutions that will dictate New Zealand's growth path. While it is harder for policy to impact on these institutions, policy can have a role in increasing the quality of labour. In this sense, some of New Zealand's weaknesses in education and technology will be worth addressing.

- How do you make your education system "more responsive" to private sector needs?
- How do you encourage business related R&D?

Going forward, I see *three policy areas as being paramount to sustaining a higher rate of growth*:

- Sound and stable macro policies. It is too easy to forget just how important these are. As a country, we are still new to this game and in terms of a less volatile real exchange rate we may not be there yet.
- A shared social vision as to New Zealand's future. I do not believe that we are clear as a country that we want growth and what we are prepared to sacrifice to get it. This requires political leadership as well as policy advice.
- Greater internationalisation. I see this as mainly involving attitudinal changes in New Zealand toward seeing the world less as a threat and more as the only realistic means that we can have rising incomes. In practice, this will mean greater commitment for trade agreements and perhaps greater assistance to exporters.

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Some comparable indicators

	NZ	SWI	FIN	IRE	DEN	ICE	USA	CAN	AUS	VEN
Income Distribution of Lowest 20% of households 93	5.1	5.2	6.3	7.2	5.4	8.6	4.7	5.7	4.4	4.8
Income Distribution of Lowest 20% of households 98	2.7	6.9	10	6.7	9.6	8	5.2	7.5	5.9	3.7
Income Distribution of Highest 20% of Households 93	44.7	44.6	37.6	39.4	38.6	36.2	41.9	40.2	42.2	49.5
Income Distribution of Highest 20% of Households 98	46.9	40.3	35.8	42.9	34.5	37	46.4	39.3	41.3	53.1

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	NZ	SWI	FIN	IRE	DEN	ICE
Public Expend on Education % GDP 99	7.3	6.7	5.9	6.7	8.2	6.3
% Popn with some tertiary education	26	25	36	29	27	24
Quality of basic maths and science education survey rank 99	35	7	12	10	40	37
Education System meets needs of competitive economy survey rank 01	27	5	1	2	11	9
Engineer graduates (% of graduates) 99	6.4	15.7	23.8	10.1	13.7	5.2
Spending on R&D %GDP 99	1.136	2.731	3.094	1.608	1.965	1.883
Availability of quality engineers survey rank 99	44	7	10	23	32	16
Industry Spending on R&D %GDP 1997	0.34	1.85	1.75	0.99	0.95	0.77
Business Spending on R&D per capita $US 99	55.2	807.92	536.32	220.87	412.3	233.77
Researchers per 10000 labour force 97	45	55	83	51	61	91
% Hi tech trade (exports/imports) 98	15	98	133	177	97	15
Technology transfer btw universities and companies survey rank 01	24	6	1	5	15	10

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	NZ	SWI	FIN	IRE	DEN	ICE	TAS	AC	URU (1999)
Population 95	3580	7081	5108	3580	5228	267	474	2381	
Population 98	3792	7110	5153	3705	5301	274	471	2371.9	3320
GDP/capita 99 $USPPP	17873	26817	22621	24770	24856	25760	20250	17522	6077
% Employment in agriculture 98	8.5	4.6	6.5	9.1	3.6	8.6		2.6 (95)	13
% GDP from agriculture 98	7.5 (95)		3.8	4.7	2.9	11.2 (96)			10.5
Exports as a %GDP 70	22.6	31	24.5	34.5	27.2	43.7			
Exports as a %GDP 90	27.6	36.3	22.8	57	35.8	33.9			
Exports as a %GDP 99	31.9	42.1	37.5	87.6	36.9	34.3			19.4
Goods Exports as % GDP 86	26.7	40.2	30.2	69.4	36.6	40.4			
Goods Exports as % GDP 90	21.7	28.4	19.4	56	27.1	27.1			
Goods Exports as % GDP 98	18.2	40.8	38.4	81.6	35.8	27.7	18.9	24.4	11.7
Govt current exp as % of GDP 98	15.3	13.7	21.7	14.6	25.6	21.1			24.6
Employment as % of working age population 99	70.6	80.6	66.9	63.8	76.1	85.6			

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