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A NEW-OLD APPROACH TO INDUSTRIAL-CUM-IMMIGRATION POLICY: OR HOW TO STOP NEW ZEALAND FROM FALLING OUT OF THE OECD

Robert Hunter Wade[1]

ABSTRACT

For the best part of 15 years in the 1980s and first half of the 1990s a single recipe dominated the development agenda—comprising deregulation, privatization, monetary stabilization, and full integration of the national economy into the international economy. It was known as the Washington Consensus, or the “finance ministry” agenda. In the second half of the 1990s it has come under mounting challenge, mainly from what could be called the “civil society” agenda advanced particularly by coalitions of non-governmental organizations. Having the finance ministry agenda put under challenge represents an improvement over the earlier situation where it reigned largely unchecked by actors with real institutional power. But the civil society agenda has its own weaknesses. And more importantly, the two together preempt attention to a set of issues that should be central, a “third way” industrial policy agenda. In this third way agenda, immigration policy is the new frontier of industrial policy. Immigration policy includes not only the recruitment of highly skilled non-nationals but also includes two kinds of “reverse brain drain” (or “brain gain”) policies: policies to promote “return” and policies to make use of the “diaspora”. I describe return and diaspora policies in Taiwan and South Korea. Throughout, the New Zealand case is my explicit or implicit point of reference. The urgency of debating the arguments made here comes from the fact that New Zealand is on course to lose the capacity to sustain its population at the material living conditions of the prosperous western democracies. At the end I discuss New Zealand’s situation and policy responses to it.

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From the early 1980s to the mid 1990s economic policy making in most of the OECD[2] countries followed a recipe of market liberalization and privatization—combining a belief in fiscal conservatism, in demand management entirely by the finance ministry or central bank, in capital markets as efficient suppliers of capital, in deregulated labor markets as the cure to unemployment, and in the private sector as inherently more efficient, more effective in supplying most goods and services than the public sector. The recipe came to be known as the Washington Consensus in honor of the place where it

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[2] The Organization for Economic Cooperation and Development (OECD) is the club of rich countries, excluding the Gulf oil exporters and now including a few middle-income countries geopolitically important for the dominant states.

was aggressively espoused as the recipe for not only the United States but the whole world. Among the OECD countries the governments of the English-speaking countries (New Zealand, Australia, Canada, the United States, and Britain) pushed the recipe further than the continental European countries or Japan. Amongst the English-speaking countries, New Zealand pushed it more comprehensively and more sustainedly than the others. (It would have been called the Wellington Consensus if the name had honored the place of unqualified commitment.) Many developing countries followed suit, with strong encouragement from the World Bank, the IMF, and the US Treasury, all located within a convenient stone's throw of each other in Washington DC. We can think of the movement towards deregulation, privatization and monetary stabilization as a global wave, whereby many states around the world *redefined state responsibilities* by shrinking them while expanding the scope of private market allocations. The word "reform" came to mean a change of policies in a liberalizing direction; changes of policies not in a liberalizing direction were not called reforms. Reforms were good by definition, so liberalization was good by definition. [3]

Liberalization was presented as a way out of strategies of trade protection and high levels of state intervention, strategies generically called "import substituting industrialization" (ISI). ISI strategies had earlier been promoted in the belief that economies that were faced with transforming their base out of natural resource-based production and into higher value-added industrial activities required a significant degree of state intervention, or "governing the market", in order to succeed. However, the actual experience of real-world ISI

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[3] The American doctrine of "coercive liberalism" or "liberal imperialism"-- a right to force other countries into accepting full-scale free markets, bypassing democratic processes if necessary—was expounded as the "enlargement strategy". In the words of National Security Advisor Anthony Lake (speech, September 21, 1993), "…we must promote democracy and market economics in the world—because it [sic] protects our interests and security, and because it reflects values that are both American and universal….Throughout the Cold War we contained a global threat to market democracies….The successor to a doctrine of containment must be a strategyof enlargement—enlargement of the world's free community of market democracies". Or in the words of an editorial in *Business Week* ("Containment, nineties style", January 17, 1994), "The Clinton Administration…is the first Administration to elevate national economic interests to a strategic position in foreign policy….As market forces sweep through once-authoritarian countries, creating new wealth for millions of people, they are also causing others to lose status and income. Those dispossessed on the road to capitalism are turning increasingly to the extreme right or left….the main element of any U.S. foreign policy must now be 'enlargement'—unyielding promotion of an open global-market economy. But to guarantee the spread of market economies overseas, the U.S. must also contain the forces of reaction. This won't be easy." The US pressure on East Asian developing countries, especially South Korea, to open their financial markets was indeed "unyielding". The East Asian financial crisis of 1997-99 was a blessing from this point of view, because it amplified US and IMF leverage. As Lawrence Summers, the Clinton Administration's deputy Treasury Secretary and then Treasury Secretary (now president of Harvard University), recently explained, "Times of financial emergency are often moments when [our] leverage is greatest, when there is the greatest malleability with respect to structural change" (Lawrence Summers, speech to World Bank country directors, 2 May 2001). The Clinton Administrations were unusually dependent on Wall Street for electoral and other financing, and Wall Street wanted, above all else, free capital movements and unrestricted entry of US financial services firms to other markets. See my papers cited below, especially "The US role in the long Asian crisis of 1990-2000" and "National power, coercive liberalism, and 'global' finance" . The Clinton Administration and the IMF even targetted, of all countries, Ethiopia. See my "Capital and revenge: the IMF and Ethiopia", *Challenge*, August 2001.

strategies did not support this expectation, or so it came to be widely believed. ISI caused resources to be used in variously unproductive ways: insufficient competition in the protected domestic market meant that many resources were used inefficiently in their current use; the existence of "rents" (unearned income yielded by an import license, for example) encouraged diversion of resources into the socially unproductive uses needed to obtain the rents (marrying the minister's daughter, or outright black-market purchase); and trade protection encouraged resources to move into activities which were not in the economy's comparative advantage. In short, ISI strategies caused multiple inefficiencies.

Challenges to the Washington Consensus

Backed by the hegemonic power and its armada of like-minded international organizations, the Washington Consensus quickly acquired legitimacy in finance ministries and academic economics departments around the world in the 1980s. Through the 1990s there was a slow buildup of criticicism of it on grounds of ineffectiveness, high costs, and adverse effects on distribution.

- First, the Latin America debt crisis of the 1980s and the Mexican crisis of 1994 prompted a widening acceptance of the point that financial opening and liberalization (FOLI) could be the source of severe macroeconomic instability. Latin American indebtedness reached extreme proportions in those countries that had most full embraced a neoliberal strategy before the crisis, and was incurred by the very private sector that was supposedly less likely to economically miscalculate than the government. Neoliberal conceptions led Latin American policy elites to lose sight of the need for a long term growth strategy. They came to believe that a long term strategy could be replaced by the signals of short term financial markets, with the result that rapid, debt-fuelled growth in the 1970s was brought to a catastrophic end between 1979 and 1982 by the second oil shock and the US interest rate shock. The Mexican crisis of 1994 was in many ways a re-run of the earlier events. Some Latin American economists drew on these experiences to challenge the Washington Consensus.
- Second, the Asian crisis of 1997-98 dealt the Washington Consensus a hard blow, for it affected countries—South Korea, Thailand, Malaysia, Indonesia, Philippines—whose spectacular economic success (compared to that of other developing countries) had been explained as the result of their implementing Washington Consensus policies. The crisis had much less effect in nearby countries that are not on anyone's list of "highly reformed economies", notably China and India.[4]

[4] See Wade, "The US role in the long Asian crisis of 1990-2000", in F. Batista-Rivera and A. Lukauskis (eds.), *The East Asian Crisis and Its Aftermath*, Edward Elgar, 2001; "Wheels within wheels: rethinking the Asian crisis and the Asian model", *Annual Review of Political Science*, *2000,* v.3, 2000, pp.85-115; "Out of the box: rethinking the governance of international financial markets", *Journal of Human Development*, v.1,

- Third, many countries that have tried Washington Consensus policies have experienced good growth of trade and foreign direct inward-investment and low inflation, but the promised land of high economic growth rates has failed to arrive. Indeed, over the whole period from 1980 to 1998 the growth of per capita GDP in the three developing regions of Latin America, Africa and Eastern Europe/Former Soviet Union was either zero (Latin America and Africa) or negative (Eastern Europe/Former Soviet Union). Asia was the only developing region which had positive per capita growth, reflecting especially the relative fast growth of non-Washington Consensus China and India.[5]
- Fourth, national income distribution has become more unequal in most developing countries (accounting for a majority of the population of developing countries) and in some of the OECD countries. Among the OECD countries, the English-speaking countries where liberalization has been pushed furthest are also the most unequal. (The income of the top 20 % compared to the income of the bottom 20% in 1992 was highest in the United States, followed by Australia, NZ, Switzerland, Canada, and Britain, then the continental European countries. Japan was most equal.)[6]
- Fifth, "globalization" has been challenged by a rising civil society movement in the rich world, especially since the WTO meeting in Seattle in November 1999.
- Sixth, public dissaffection has been inflamed by the fall in the quality of service in newly privatized industries that impinge on people's daily

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n.1, pp.145-57; "National power, coercive liberalism, and 'global' finance", in *International Politics: Current Issues and Enduring Themes*, eds. Robert Art and Robert Jervis, 1999, Addison Wesley Longman; "The battle over capital flows", *Foreign Policy*, December, 1998, pp.41-54; "Two views on Asia: The resources lie within", *The Economist*, November 7, 1998, pp.19-21, with Frank Veneroso; "From 'miracle' to 'cronyism': explaining the Great Asian Slump", *Cambridge Journal of Economics*, 22 (6), November, 1998, pp.693-706; "The Asian debt-and-development crisis of 1997-?: causes and consequences", *World Development*, 26 (8), August, 1998, pp.1535-53; "The gathering world slump and the battle over capital controls", *New Left Review*, 231, September-October, 1998, with Frank Veneroso, pp.13-42; "The Asian crisis: the high debt model versus the Wall Street-Treasury-IMF complex", *New Left Review,* 228, March-April, 1998, with Frank Veneroso, pp.3-23.

[5] Wade, "Globalization and world income distribution: trends, causes, consequences and public policy", typescript, July 2001; and "Global inequality: winners and losers", *The Economist*, By Invitation, April 28, 2001, p.79-81.

[6] Even *The Economist*, no foe of income inequality, agrees that rapid market liberalization is likely to widen (within-country) income inequalities. "It is no coincidence that the biggest increases in income inequalities have occurred in economies such as those of America, Britain and New Zealand, where free-market economic policies have been pursued most zealously", it says. Explaining why income distribution has become more unequal in the English-speaking countries than in continental Europe, *The Economist* stresses the role of powerful trade unions, centralised wage bargaining and high minimum wages in Europe in propping up the wages of the low-paid; polarization in household structure between two-earner households and jobless single-parent families; and investment income rising faster than wage income as stockmarkets boomed in the 1980s and 1990s. "Inequality: for richer, for poorer", *The Economist*, 5 November 1994, 19-21.

lives—notably the disastrous fall in rail service (Britain, New Zealand) and in power supply (California, New Zealand).[7]

- Seventh, the dolt.com and fibre optic network bubbles—blown up by private capital markets allocating hundreds of billions of US dollars to uses that now look to be "the greatest misallocation of resources since Mao Zedong mobilized millions of Chinese to force sparrows out of the trees"—and growing jitters about economic performance in the United States and Europe, not to mention the gloom about Japan's seemingly permanent recession, have generated public interest in Keynesian ideas for the first time in over a decade—ideas such as the possibility of market failure, the efficacy of fiscal policy as a tool of demand management, the inherent capacity of financial markets to produce crisis, and the economic worth of public investment.[8]

Finance Ministry Agenda and Civil Society Agenda in Contention

No coherent alternative agenda to the Washington Consensus has emerged, or none that commands wide agreement. But much of the opposition to it marches under the banner of what could loosely be called the "civil society" agenda. In much of the world these two broad public policy orientations to development strategy are now in contention. I shall relabel the Washington Consensus as the finance ministry agenda, in order to make clear that it is not just a set of ideas pushed from Washington but commands wide support in finance ministries, central banks and the financial industry around the world.

The Washington Consensus/finance ministry agenda--of deregulation, privatization, monetary stabilization, free trade and free capital movements--remains politically dominant; but now supplemented with more emphasis than before on state responsibility for (but not necessarily provision of) education and health services, and on "institutional strengthening", especially in financial markets. So the earlier US/IMF/World Bank insistence on rapid financial opening has been softened by more recognition of the need for "orderly sequencing", though still always in the direction of financial opening.

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[7] The case of the British railway system illustrates the tragedy that a government can inflict on its citizens in the name of low taxes and low subsidies to public services. In the last year of its existence, 1996, British Rail boasted the lowest public subsidy for a railway in Europe—stg. 9 compared to stg. 21 in France and stg. 33 in Italy; and delivered unquestionably the worst service. Privatization—based on the obvious fallacy that train companies would compete, driving efficiency up and prices down—gave the private train companies a free run at a captive market. Predictably, prices have increased and service has deteriorated, giving Britain, the only country in Europe with private railways, the highest fares, the slowest trains (slower and less frequent than in the 1930s in the case of Sussex to London) , and the highest rate of accidents. Railtrack, the company that owns the rails and the stations (but not the rolling stock), is contractually obliged to compensate the train-operating companies if its trackwork delay their trains, so it quite understandably discourages its inspectors from finding rails needing repairs. The train-operating companies are penalized for late arrivals, so they quite understandably lengthen the scheduled journey times. Tony Judt, "'Twas a famous victory", *New York Review of Books*, July 19, 2001, 24-28.

[8] Gerard Baker, "The Keynesian genie is recalled from the bottle", *Financial Times*, May 3, 2001.

This agenda tends to be promoted by finance ministries, central banks, the IMF, the "country economists" at the World Bank, the OECD, economic analysts on CNN and at the *Financial Times* and *The Economist,* and by academic economists (especially those trained in Anglo-American graduate schools).[9] Ever since 1986 when they started to meet several times a year the G7 finance ministers in their communiqués have advocated more deregulation, privatization and monetary stabilization as the cure for problems of slow G7 economic growth, high unemployment (in Europe), volatile exchange rates, and the like.[10]

The civil society agenda tends to dispute the core propositions of the finance ministry agenda (such as "Free trade tends to improve economic welfare"). But its main positive thrust rests on the proposition that there will be a generalized improvement in public decision-making by empowering local groups and "civil society" more generally (giving them more role to decide school curricula or energy investments, for example). It wants a new balance between the market and the public interest: it does not deny market incentives, but wants to rely on market incentives less exclusively than the finance ministry agenda; it places more positive value on public responsibility for providing public goods and avoiding public bads.

Underlying this stance is a concept of public policy as any organized form of action that pursues objectives of a collective kind. This broadens the concept of public policy well beyond the state, especially beyond the national (as distinct from local) state, and it opens up conceptual space for public policy making in, by agents of, civil society.

The civil society agenda tends to be supported by NGOs, also by officials in aid agencies or social policy agencies, in some of the UN specialized agencies, and in the "social policy" departments of the World Bank. (It has negligible traction inside the IMF.)

The two agendas express different world views, as can be seen in their implicit assumptions about the biophysical environment. The finance ministry agenda sees nature as robust and resilient, and sees technological innovation as the way around environmental constraints on economic growth. The civil society agenda tends to see nature as fragile and liable to be deeply damaged by market-driven processes.

The fact of this debate between the finance ministry agenda and the civil society agenda represents an improvement over the second half of the 1980s and the first half of the 1990s; for at least there is now debate, whereas before

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[9] I draw on Ravi Kanbur, "Economic policy, distribution and poverty: the nature of disagreements", *World Development*, June 2001. See also my "Making the *World Development Report 2000: Attacking Poverty*", *World Development,* August 2001. The president of the European Central Bank, Wim Duisenberg, is a reliable exponent. He said recently that, in the words of an *International Herald Tribune* report (14 June 2001), "The new economy has not yet arrived in Europe….And it probably will not arrive until European governments remove many of the regulations that prevent labor and product markets from being more flexible".

[10] See further, Wade, "Out of the box: rethinking the governance of international financial markets", *Journal of Human Development*, v.1, n.1, pp.145-57

we lived under the elected dictatorship of TINA ("There is no alternative [to the Washington Consensus/finance ministry agenda]"). But the resurgent civil society agenda has serious weaknesses; and the bipolar debate between these two agendas obscures a third and vital agenda, particularly vital for New Zealand.

Weaknesses in the Civil Society Agenda

The civil society agenda tends to see notions of participation, empowerment and the like as a substitute for economic growth; the good civil society is one with lots of empowerment and low economic growth, a society where material values are increasingly unimportant and people spend their time making arts and crafts or writing books or being active in the community or advocating for good causes. This may sound like a nice idea, but in the real world-system the polarizing forces are such that a country that loses economic momentum for an extended period is likely to find itself falling relatively further and further behind. The idea of the good civil society assumes, of course, that the economy is productive enough that self-activated citizens do have lap tops and internet connections and CD players. In a country with very low long term economic growth this assumption holds for fewer and fewer of the population.

Second, the civil society agenda presumes that participation and empowerment yield better decisions about public policy and resource allocation (and so may even produce faster economic growth). This sounds plausible and admirable, but there is precious little empirical evidence in support of it. No doubt it is truer in some fields than in others. But its blanket acceptance is based on faith. Proponents tend to forget that where states function badly, markets also function badly and "civil society" functions badly; that local elites may capture participative processes and loot as shamelessly as the state; that participation has high costs; and that more extensive consultation with citizens does not substitute for expert analysis and cross-country knowledge.

Third, civil society sounds warm and cuddly, but we should remember that NGOs tend to be single interest groups and as such, politically divisive. They tend not to be concerned with reconciling their demands and agendas with those of a whole spectrum of others. Indeed, the civil society agenda, if not always anti-state, tends to turn its back on the state and political parties. But when a political party holds a meeting and no-one turns up because the activists are all at NGO meetings, this is a sign of serious political weakness. Why? Because the state and political parties are the organizations that should be aggregating demands, making compromises, choosing priorities, devising coherent national strategies, taking responsibility, accepting accountability.

The civil society agenda, by turning its back on the state and celebrating local action (even if in global context), tends to ignore this fundamental point.[11]

Fourth, some NGOs, far from turning their backs on the state and public organizations, are calling for NGOs to be given rights to participation in public policy making, alongside parliaments. So they call for the World Bank to obtain their endorsement for Country Assistant Strategies, for example. Remarkably, the Bank has moved a long way in its democratic borrowing countries towards engaging with groups other than the government in the design of Country Assistance Strategies and loan projects, insisting that the government accept this engagement—in a way that no US city mayor would accept federal government intervention.

The Industrial Policy Agenda

The debate between the finance ministry agenda and the civil society agenda—often it is hardly a debate, as in the anti-globalization protests—occupies the heartland of public economic policy making in many countries. It has squeezed to the margins of attention a “third way” agenda to do with national development strategies with pro-active industrial and technology policies.[12] The World Bank, for example, got rid of virtually all its capacity to operate in this area during the 1980s, and its more recent Comprehensive Development Framework (CDF) takes the focus away from economic growth and puts it squarely on “poverty reduction”, with the *civil society* agenda being seen as more relevant to poverty reduction than the finance ministry agenda (this shift reflecting President James Wolfensohn’s well known disdain for economics and economists). And the World Trade Organization (WTO) makes pro-active industrial policies more problematic than its less intrusive predecessor, the GATT.

I argue that it is very difficult for a country (New Zealand, for example) to change its place in the world economy from a primary goods producer to a producer of more technologically complex industrial goods—and sustain higher

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[11] I speak here of the civil society agenda in a development context. The “anti-globalization” protestors who in the name of “civil society” have disrupted one gathering of G8 and world leaders after another since the WTO meeting in Seattle in November 1999 have no clear agenda, in contrast to the protest movement against the American war in Vietnam and some other international protest movements. They are demonstrating against a diffuse sense of powerlessness in the face of the growing power of capital to override social constraints on business, and against the claims of the champions of free trade and free capital movements that this is not a problem that the populace should worry itself about—because the rising tide will lift all boats. Though their agenda is not clear, theirs is the latest episode in a long tradition of protest against free market capitalism. And tactics aside, they are right to ring the alarm. The last great surge of global integration and inequality, in the final decades of the 19th century and the first decade of the twentieth, produced such inequality and disruption that governments constrained and then reversed global integration, producing on the way two world wars and the Great Depression in between. After 1945 democratic governments had to strengthen a range of social controls on business and redistribute income downwards—just what the current wave of “globalization” has been undoing.

[12] I call this a third way agenda, but not the third way of Clinton-Blair, on the hollowness of which see Wade, “The battle over capital flows”, *Foreign Policy*, December, 1998, pp.41-54.

and stabler rates of economic growth—without a concerted national economic and technological strategy. In other words, integration into the international economy on the basis of the individual decisions of economic agents responding to given international prices will tend to lock the country into a low growth trajectory, especially in the case of a land-rich, low-population-density country.[13]

What is striking about the world economy is how *closed* it has been at the top, how little upward mobility into the club of rich, non-oil-based economies there has been in the period since 1960. If we take as a threshold 50 percent of the average GNP[14] of the "organic core" of the world economy (North America, northwestern Europe, Australasia), the only non-oil-based economies to have moved *up* across this threshold since 1960 are: Japan and Italy (1960s); none in the 1970s; Spain, Hong Kong and Singapore (1980s); Taiwan probably crossed it in the late 1990s, and South Korea may cross it in the next few years.

Taiwan and South Korea are the ones that traveled the furthest, from countries that in 1960 looked much like Thailand then and still today (outside of Bangkok) to countries that since the early 1990s have been taking out more patents in the United States than all but five OECD countries. (Excluding the US itself the rank order is 1.Japan, 2. Germany, 3.France, 4.Britain, 5.Canada, 6.Taiwan, 7.Korea, 8.Italy, followed by the other OECD countries.) This is a measure of their technological achievement.

In *Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization* (Princeton, 1990), I argued that the success of Taiwan and South Korea owed a lot to an active and industry-specific industrial policy, complemented by manpower planning (some aspects of which I describe below). The industrial policy combined an import-substitution strategy with an export promotion strategy, in a way most economists say is either logically or practically impossible. Taiwan and Korea cannot remotely be held up as examples of neoliberal success, for all that many economists have tried to do so.

The diagnostic test of the difference between the East Asian strategy and the neoliberal strategy comes in the case of a home-based industry that is being outcompeted by imports. The industry might close down, with imports produced by non-national producers replacing domestic production; it might move some of its operations to cheaper offshore sites so that it could continue the higher value-added operations at home; it might sell itself to foreign firms, which then make decisions about its fate in accordance with their larger corporate strategy (TranzRail); or it might undertake technological and organizational upgrading so that it can continue to produce at home and compete against imports. In the neoliberal approach the government is meant to be *indifferent* to the fate of the industry provided only that two conditions are met: imports are not being "dumped", and national security considerations are not involved. In the East

[13] See Osvaldo Sunkel (ed), *Development From Within: Toward a Neostructuralist Approach for Latin America*, Lynne Rienner, Boulder, 1993.

[14] GNP in market exchange rates, not purchasing power parity.

Asian industrial policy approach the government is not indifferent to what happens. It looks at the industry in the perspective of the economy's evolution, and takes a strategic judgment as to what should happen—which may mean that it decides that the industry is not strategic and therefore it will remain indifferent as to what happens. To make such judgments the government must have one or more organizations in place that can make the judgments free of patronage and electoral politics and not dominated by neoliberal economics (which rejects the very idea of pro-active market-steering national strategies).

The industrial policy agenda and its cousin, import-substituting industrialization (ISI), have been discredited by an array of economists and political conservatives on the grounds that they call for massive state intervention in the market, complete with high levels of protection, subsidies, national champions, nannying state, and the like; and that this state intervention produces great inefficencies. Exhibit A is Latin America, that according to the conventional argument practiced ISI since the 1930s and paid dearly for the resulting inefficencies in the form of the debt crisis of the 1980s.

This discrediting of industrial policy is mostly spurious. Take Latin America. The debt crisis was due mostly to mismanagement on the left hand (liabilities) side of the balance sheet, rather than to mismanagement on the right hand (assets) side of the balance sheet. Latin American countries overborrowed, western banks overlent (where were western bank regulators?). Yet somehow—one would need to look at it in terms of the sociology of knowledge to understand how--the Latin American debt crisis has been used to discredit the whole strategy of ISI, the strategy for managing the right hand side of the balance sheet. And the other side of this ISI-discrediting argument is that Taiwan and South Korea, which are accepted as success stories, did *not* practice ISI. This too is wrong. They practiced ISI even more than many Latin American countries, as I show in *Governing the Market*.[15] For example, long after Taiwan's trade reforms were introduced in the late 1950s and early 1960s Taiwan had a higher effective rate of protection in manufacturing than Mexico, and greater variation in rates of effective protection, yet was able to outcompete Mexican products in the US market though it was 4,000 miles away and Mexico was next door.

Next, take the argument that the industrial policy agenda/ISI requires massive state intervention. This is not so. The United States, that admonishes others not to have industrial policy, itself practices industrial policy quite successfully. Take the Defense Advanced Projects Research Agency (DARPA). DARPA is a small agency in the Defense Department, with roughly 200 staff, that since the 1970s has acted as an industrial policy agency for a wide range of top-end electronic and biological industries, aiming to spur innovation and adoption and to ensure that the US retains the capacity to produce top-end

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[15] See *Governing the Market*, chapter 5; also the important study by Dani Rodrik, *The New Global Economy and Developing Countries: Making Openness Work*, Policy Essay 24, Overseas Development Council, chapters 3 and 4.

products. For it to be politically acceptable—made to look as though the US is not doing “industrial policy”-- DARPA has had to have a national security rationale; but this rationale covers the drive for competititiveness in many high value-added industries with important civilian products.[16]

DARPA’s influence has come more from “jaw jaw” than money. For example, at a certain point in the 1980s DARPA realized that the US electronics industry faced a serious problem in competing against Japanese top-end products because US firms were no longer able to compete against Japanese firms in making advanced chip-making equipment, and Japanese chip-making-equipment firms always gave their latest generation equipment to Japanese firms to “test” for several months before supplying US competitors, putting US users of advanced chips at a big disadvantage. Then as now, product generations in advanced semiconductors, like (at the time) memories and (now) CPU chips, succeed each other every 18 months to two years. Moreover, every new generation of chips roughly doubles the number of components on each chip and halves the price—so the competition to roll out the next generation is intense and first-mover advantages are a *sine qua non* to maintain competitiveness. Faced with the Japanese holding back on supplying American buyers with latest-generation chip-making equipment DARPA assembled the biggest US chip-makers and chip-users into a consortium called SEMATECH, and encouraged them to put enough knowledge and money into SEMATECH for it to re-grow a US capacity to make advanced chip-making equipment. For the first 5 years of SEMATECH’s existence DARPA funded 50 percent of the consortium. It worked; SEMATECH became self-financing, and the US regained domestic capacity to make latest generation chip-making machines.[17]

The US’s “national missile defense” shield, now called the “missile defense” shield after the allies protested at the implications of “national”, is another example. Justified with blatant fakery as necessary to defend against North Korean and Iraqi missile attacks on the US, it is really a national industrial policy for the aerospace industry, a means of using public money and public authority to keep the US pre-eminent in the stream of high value-added, innovation-intensive industries that feed aerospace (as well as a way to repay the Republican right and the defense industry for financial support during the Bush presidential campaign).

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[16] DARPA has quite a rigorous process for selecting industries that they regard as dual-use (military-civilian). They assess industries that (a) produce critical defense products, (b) depend heavily on civilian products and markets, and (c) are under stiffening competition from abroad. In those industries DARPA identifies the specific dual-use sectors where they can both identify a defense need and a competitive threat in the civilian arena, and design judicious public interventions—like Sematech—to help assure a robust domestic industry. DARPA has about ten divisions, of which half are for dual-use industries and half strictly military. My thanks to Julie Gorte for discussions about DARPA.

[17] SEMATECH has changed its name to International Sematech. It now has international members, committees, and participation in construction of the technology roadmaps. http://www.sematech.org/public/index.htm

Take another example from Taiwan, that concerns financial markets. (I use "industrial policy" broadly enough to include financial market policy.) Taiwan wants to join the WTO, a condition of which is that it give up many of the regulations and restrictions in financial markets that it has had in place for decades; in particular, restrictions on the movement of capital in and out. Taiwan's WTO negotiators, led by neoliberal economists, are keen to get rid of such "anachronistic" restrictions in any case, quite apart from WTO.[18] The central bank, however, whose governor is the most senior economic official in the country, is worried. It has drawn the lesson from the Asian crisis that restrictions on capital movements are needed so as to be able to put some limits on both inflows and outflows. As the country's WTO negotiators pledge to remove many formal restrictions the central bank is busy building up a team of financial engineers and a control system that will allow it to track individual capital movements and apply various sorts of pressure, much of it covert, on movements and movers that it deems unwise—at a time of incipient regional panic, for example.

What these examples from the US and Taiwan have in common is a conviction on the part of powerful public actors that the role of government has to go beyond that sanctioned by (a) the neoliberal theory, with its assumptions of free availability of technological knowledge and market-failure as resulting, for the most part, from government intervention, and also beyond (b) the Keynesian theory, with its emphasis on short term macroeconomic variables. The government has to empower a place in the system where politically-accountable experts exercise foresight in a comprehensive, economy-wide, world-wide scope, in a way that private sector firms have neither the resources nor the incentives to do; and give those experts enough power to influence other decision-making in line with the conclusions from their exercise of foresight. The influencing occurs mainly through "market-friendly" means, by shifting the opportunities for private businesspeople to make profits. Profits and entrepreneurship are celebrated in this approach as drivers of innovation; but free-market competition, maximally flexible labor markets and the like are not seen as the best route to profits and innovation.

Immigration Policy As A Form Of Industrial Policy

It is now conventional wisdom that capital, as a factor of production, is highly mobile and that the ability to attract foreign capital and manage its impacts on domestic structures must be a central concern of policymakers in developed and developing countries. Quite recently we have been seeing a change in the zeitgeist, as the realization spreads that (a) highly skilled labor is at least as important in high value-added production as capital, (b) highly skilled

[18] The negotiators come mostly from the Council for Economic Planning and Development, which is now a spearhead for neoliberal views, its staff being trained mostly in US universities.

labor has become much more geographically mobile than it used to be, and (c) the OECD countries are soon to face a sharp increase in labor shortages, especially in highly skilled categories, as the baby boomer generation retires. Companies and states must become centrally concerned about attracting and retaining highly skilled labor. Immigration policy—the ability to attract skilled labor (whether foreign nationals or expatriates)--is the new frontier of industrial policy, and should be integrated with the more conventional aspects of industrial policy described above.[19] Indeed, the governments of the core countries of the world economy (North America, northwestern Europe, and even, recently, Japan[20]) are now falling over themselves to attract into their territories skilled workers from developing countries, especially in ICT sectors and in health care. The inflow of legal immigrants into the US reached 800,000 a year in the mid-1990s, more than twice the inflow in the mid 1960s, and close to the average inflows during the peak years of the Great Migration in the early twentieth century.

The political sensitivities are nowhere more apparent than in Germany, where an independent commission on immigration and integration has just published a report proposing that 50,000 skilled workers a year should be given permanent or temporary work permits. It has been called a "radical" proposal and has stirred up much controversy—yet 50,000 a year is a drop in the ocean compared with the 7.3 million non-nationals living in Germany. The reason it is controversial is partly that Germany has 3.8 million registered unemployed, and the government fears that immigration will be used to outflank it at the next election.[21]

The developed countries are nevertheless pushing ahead with immigration programs in order to meet shortages of skilled people in rapidly growing sectors, notably health care, and also in sectors where states are reluctant to pay salaries high enough to attract nationals, again in health care and also for teachers in the public school systems of the US and Britain. The other major reason is to shore up social security systems that are becoming increasingly fragile as life spans rise and fertility declines, and as reductions in benefits or increases in payroll taxes remain politically unacceptable.

Essentially governments are competing against each other for migrants by offering deals: by offering some combination of benefits (economic opportunities) and costs (difficulties of obtaining legal status), the combination

[19] In what follows I draw on Mihir Desai, Devesh Kapur, and John McHale, "Sharing the spoils: taxing international human capital flows", typescript, Harvard University, June 2001; and Devesh Kapur, "Diasporas and technology transfer", *Journal of Human Development*, v.2, n.2, 2001. I also draw on discussions with Devesh Kapur and Alessandra Casella.

[20] Japan faces a much bigger language barrier than Australia or New Zealand, but in the past few years public-private efforts have been made to attract Asian engineers; and the Ministry of Labor has been working on harmonization of high tech (mostly electronics) skill standards with Thailand and Malaysia so that Japanese employers (both in Japan and in those countries) can be more sure of what they are buying.

[21] "Migration myths", *Financial Times*, July 5, 2001.

depending on the desirability of the migrant in terms of (a) education, (b) skills, and (c) age.

The US's H-1B visa, created in 1990, allows US firms to recruit foreign professionals to work in the country for a maximum of 6 years, and the cap on the number of such visas has been raised from 65,000 a year in the early 1990s to 195,000 a year for a three year period, as of 2000. The median age of the H-1B visa holders is 28 years, and all have university degrees. In the early 1990s most were in health care; by the late 1990s most were in ICT fields. Indians are the single biggest nationality of H-1B visa holders. Of the total H-1B visa holders approved for work in the ICT sector at the end of the 1990s three quarters were born in India.

The driver of the US strategy is obvious from the name of the legislation authorizing a substantial increase in H-1B visas. It is called the "American Competitiveness in the 21rst Century Act of 2000". US success in ICT has redoubled the pressure on European countries to get migrants for themselves. It will be interesting to see whether the sense of threatened national competitiveness dominates the anti-immigrant sentiment that is prone to political backlash in European societies. One gets a sense of the possibilities for rising tolerance from Indian emigres in Germany who run curry restaurants, who report that Germans tend to assume that, being Indian, they must be computer experts. The very connotation of "Indian" is changing thanks to the role of Indians in the world-wide ICT industry. The reputational change is similar to the way that "Made in Japan" changed in the 1960s and "Made in Taiwan" changed in the 1980s.

Silicon Valley is built on ICs, says the joke, meaning not integrated circuits but Indians and Chinese. Of the firms started in Silicon Valley between 1995 and 2000, 10 percent were started by people born in India, 18 percent by people born in China/Hong Kong/Taiwan, and these two groups account for by far the largest share of the non-American-born founders, as well as the largest share of the foreign-born technical workforce.[22]

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[22] In the longer period from 1980 to 2000, Indians founded 7 %, greater Chinese 17 %; so both nationals increased their share in the second part of the 1990s. Analee Saxenian, "Silicon Valley's New Immigrant Entrepreneurs", at www.ppic.org. Saxenian says (personal communication) that no such data is available on differential rates of collapse. Note that Michael Lewis, in *The New New Thing* (Hodder and Stoughton, 1999) misquotes Saxenian as saying that nearly half of all Silicon Valley companies have been founded by Indian entrepreneurs (p.115) That exaggeration aside, Lewis' fascinating story is as much a tribute to the Indian engineers in Silicon Valley as it is to Jim Clarke, the founder of Netscape and many other things—because Clarke himself "had a thing for Indians. 'The Indian outcastes of Silicon Valley', he usually called them; 'my Indian hordes', in less sober moments" (p.113). Graduates of India's elite Indian Institutes of Technology (IITs) have flocked to the United States in such numbers that the US may be the prime beneficiary of the IITs. This migration contributes to the mechanism by which the US and the other countries of the "organic core" (North America, northwestern Europe, Australasia), that together make up 15 percent of the world's population, manage to "float" far above 80 percent of the world's population in the distribution of world income, the gap probably widening over the past two decades. See Wade, "Globalization and world income distribution: trends, causes, consequences, and public policy", typescript, Wissenschaftskolleg, Berlin, July 2001; and "Winners and losers", By Invitation, *The Economist*, 28 April 2001.

One of the politically sensitive issues concerns how to make sure that temporary immigrants (such as H-1B visa holders, in the US case, or visas granted to unskilled workers) remain temporary. One market-friendly possibility is to use the payroll or other taxes paid by the temporary workers to fund a pension account that could be withdrawn only when the immigrant returns to the country of origin.[23]

Diaspora Policy As A Form Of Industrial Policy

While the core parts of the world economy have recently been competing amongst themselves to attract skilled immigrants, the peripheral parts—including the relatively rich peripheral parts, like New Zealand and Australia, and the rapidly growing middle income countries like Taiwan and South Korea—have for much longer been losing skilled people in the form of a "brain drain" to the core countries. The question is how the source countries can derive more benefit from this brain drain.

One suggestion is to levy an exit tax on outgoing skilled migrants, in order to compensate the national economy for some of the costs of the migrants' education. For example, as tertiary education is increasingly financed by loans a system could be devised in which more of the loan would be forgiven the longer the individual works in the domestic economy after graduation; if the individual migrated immediately, all of the loan would be repayable. The issuance and renewal of passports could be made conditional on loans being in good standing. Administering such a scheme would hardly be easy.

Some governments have been trying to convert the brain drain into "brain gain", or a "brain bank", by using public policy to (a) attract back more of the highly educated and highly skilled nationals than would come through strictly private decision-making, and (b) create networks among the diaspora that can be used by organizations in the source country. These are the "return" strategy and the "network" strategy, respectively, two different routes to "brain gain".

South Korea and Taiwan were the pioneers of "return" and "network" programs.[24] Both governments organized efforts in the mid 1960s (Korea) and early 1970s (Taiwan), and have sustained these efforts ever since with consistent budgetary and administrative support. Both established cabinet-level offices to do the job, and gave these offices support from the very top of government. Beneath these brain gain offices (though this is not what they were called) were a set of mission-oriented research institutes (such as the Korean Institute of Science and Technology) established by government in industrial fields seen as

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[23] Senator Phil Gramm has suggested such an arrangement for the US.

[24] Shirley Chang, "Causes of brain drain and solutions: the Taiwan experience", *Studies in Comparative International Development*, v.27, n.1, 1992, 27-43; Bang-Soon Yoon, "Reverse brain drain in South Korea: state-led model", *Studies in Comparative InternationalDevelopment*, v.27, n.1, 1992, 4-26; Hahzoong Song, "From brain drain to reverse brain drain: three decades of Korean experience", *Science, Technology and Society*, v.2, n.2, 1997, 317-345. The government of Meiji Japan in the 1870s organized expatriate students in Europe to channel scientific and technological knowhow back home.

critical to future industrialization. These research institutes did much of the operational work of tracking highly skilled nationals abroad and encouraging them to return and join the staff of the research institutes, or to join professional associations of expatriate Korean or Taiwanese scientists and engineers. In both countries the cabinet-level office maintained a data base designed to help national scholars abroad find (public or private) employment at home and to help domestic employers to identify highly educated nationals abroad.

The return programs first identify high flying individuals in terms of criteria such as number of years since PhD, current position, number of published papers/ citation score, relevance to national priorities. The selected individuals are then offered a variety of incentives included moving costs (dropped in 1990), salary top-up, subsidized house-purchase mortgages, and the like; and at least as important, research autonomy, opportunity to establish their own firms, and so on.

Then there are the programs aimed at attracting back nationals for shorter "testing the waters" visits, perhaps of one year, also subsidized from central funds. (In Korea this program is known as the "brain pool" program.)

Both countries have used annual or biannual "national development conferences" as occasions for bringing together nationals based abroad with local counterparts at government expenses for a week or so. As a Taiwanese commentator says, "This is a rather inexpensive way to pick the brains of Taiwan's scholars and experts abroad and a highly successful public relations operation as well".[25]

Both governments have also established professional associations for national scientists and engineers abroad, with branches in the US, Canada, Europe and Japan. The government subsidizes these associations by assisting them to organize annual symposia and covering their administrative expenses. These associations are the central players in the diaspora strategy. It has been found that scientists and engineers who maintain more active contact with the associations are more likely to return to the home country.

I have seen no serious evaluation of these "return" and "diaspora" programs. It would be surprising if there was not a close connection between these programs and the high rank of Taiwan and Korea in the number of patents taken out in the US. In any case, in view of the tightening international competition for science-based professionals, it behoves the governments of source countries to do something along the same lines as Taiwan and Korea.

The New Zealand Case

In 1970 New Zealand's average GDP put it 9th in the OECD, below Australia and the Netherlands and above Germany, France, the UK and Japan (with GDP measured in terms of purchasing power parity). In 1999 New

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[25] Chang, above, p.41.

Zealand ranked 20th, just above Portugal and Korea. No other country fell nearly as far.[26] Compared to other OECD countries, New Zealand has had one of the slowest rates of economic growth since 1985, far slower than Australia's; also one of the poorest productivity performances; it has run up the highest net foreign debt to GDP; and has the third most unequal income distribution, after the United States and Australia. The growing inequality is the result of, on the one hand, a 25 percent income gain for the top 10 percent of the population thanks not to raised effort but to tax cuts, and on the other hand, an absolute fall in the average income of the bottom half of the population due to reduced public spending on education, health and welfare and higher taxes on low and middle incomes.[27]

New Zealand shows that even when the playing field is leveled according to the best neoliberal precepts and the top rate of income tax reduced to well below the OECD, nobody may turn up to play because there are plenty of more hospitable venues elsewhere.[28] Indeed, New Zealand, always the pioneer, looks set to be the first country since the Second World War to drop below the threshold of 50 percent of the average income of the "organic core" of the world economy (northwestern Europe, North America and Australasia). It may be looked back on as the Argentina of the second half of the twentieth century.

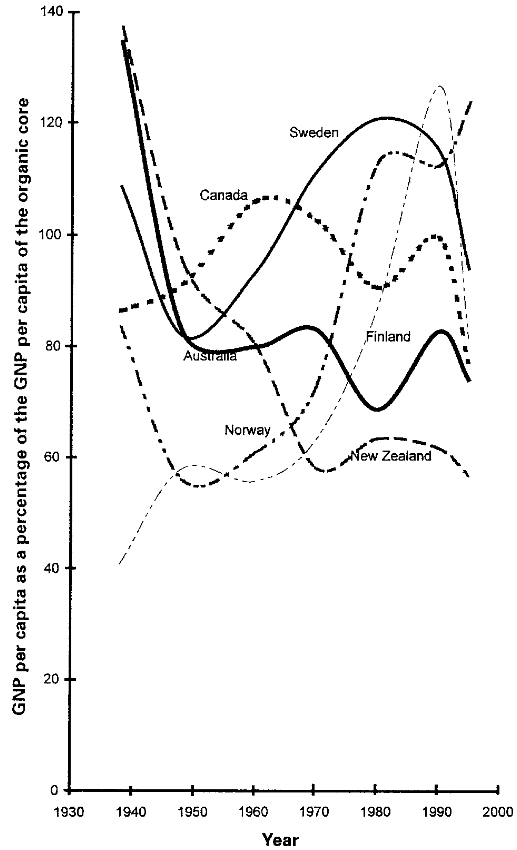
Understanding these dismal trends has to start with the point that almost all the land-rich, low-population-density, high-income countries have lost ground over the 1990s in terms of their average income as a proportion of that of the organic core. New Zealand, Australia, Canada, Sweden, Finland have all experienced a fall in their GNP per capita as a percentage of the GNP per capita of the organic core in the late 1980s and into the 1990s. (Norway is an exception, presumably because of oil exports.) That being said, the economic performance of the Scandinavian cases—again measured as GNP per capita expressed as a percentage of the GNP of the organic core—has been much better since around 1970 than that of New Zealand, Australia and Canada. And of the latter three, New Zealand's overall record is the poorest, its GNP per capita is now substantially below all of the others'. See figure 1.

Figure 1. Relative economic performance of land-rich, low-population-density organic core states

[26] Peter Mawson and Grant Scobie, "Climbing the OECD ladder: what does New Zealand have to do?", New Zealand Treasury, 4 April 2001.

[27] Brian Easton, "Paying the price of libertarianism", *Guardian Weekly*, December 28, 2000-January 3, 2001. Easton, *In Stormy Seas: The Post-War New Zealand Economy*, University of Otago Press, 1997.

[28] Tim Hazledine, "New Zealand's reforms", letter, *The Economist*, December 16, 2000.



Source: Ravi Arvind Palat, “Up the down staircase: Australasia in the ‘Pacific Century’”, *Thesis Eleven* (Melbourne), 55, November 1998, 15-40. Note: Market exchange rates.

For over a decade after the beginning of New Zealand’s economic libertarian reforms in 1984 the country was held up as a model. The World Bank, anxious to encourage countries everywhere to implement free market reforms, arranged for Latin American policy makers to tour New Zealand and New Zealand proponents to tour Latin America; and the Bank increased its own employment of enthusiastic New Zealanders from a steady 15 to more than 50. Meanwhile it did not bother to undertake its own research into the New Zealand case until the mid 1990s. Until then, it was content to take the New Zealand case as its champions presented it.

The champions of the New Zealand model described the success of the reforms by what was done (taxes cut, public spending cut, public assets sold, labor market restrictions removed, central bank given statutory independence and told to take price stability as its sole objective), not by the *results* of what was done.

Yet the great majority of New Zealand economists still claim that the reforms have been successful. How? By a number of rhetorical devices, all dubious. First, they tend to take the performance of the pre-1984 economy, the "unreformed economy", as the standard of comparison, the counterfactual. This is illegitimate: the whole policy stance of the later years of the Muldoon government was clearly unsustainable, and all the OECD countries were moving in a market-liberalizing direction. The question is whether New Zealand benefited from its *radical* free market reforms (more extreme than anywhere else in the OECD) by more than it would have benefited from a more moderate reform path, like Australia's (see below). The second dubious device is to calculate economic growth rates from 1991 to 1996, compare this growth rate to the pre-1984 one, and conclude that the reforms caused the improvement. This too is illegitimate, most obviously because 1991 was the pit of a recession, and the subsequent recovery reflected business cycle dynamics as much as impact of the reforms begun six or more years earlier.

The third device is to emphasize how the reforms have raised the country's "growth potential", as distinct from its actual growth, as though the potential is what really counts. One major study concludes, for example, "New Zealand's economic reform process may still rank as one of the more successful by world standards, with the *potential* to improve economic wellbeing compared to the outcomes from an *unreformed* economy". [29] Another concludes, "After decades of policy errors and investment blunders, New Zealand appears to have finally diagnosed its predicament appropriately and is *on a trajectory* to *maintain its economy as a consistent high performer among the OECD*". [30] A new paper by the governor of the central bank says, "I don't think there is much doubt that the reforms of the mid-eighties and early nineties have helped our growth *potential* a great deal". [31]

The central bank's governor's paper also describes New Zealand as "a relatively egalitarian society", it says that New Zealand is "keeping up" with the rest of the OECD, and so it poses as the relevant question, "Why have we note done *better still*?". As we have seen, New Zealand is now the third most unequal country in the OECD; and the growth rate has been below the OECD average, and even if it had been equal to the average the absolute income gap would still be widening because New Zealand's level of income is well below the average. Wrong or misleading the paper's statements may be, but since most readers will believe what the governor of the central bank says, they may nevertheless be effective for maintaining optimism about the success of the reforms.

And so the New Zealand version of the finance ministry agenda remains strongly entrenched in the minds of Treasury and Ministry of Foreign Affairs officials, as also in the minds of academic economists and in OECD reports. A recent OECD paper gently rebuked the government, saying that "The reform

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[29] B. Silverstone, A. Bollard, R. Lattimore (eds), *A Study of Economic Reform: The Case of New Zealand*, Amsterdam: Elsevier, 1996, p.23. Emphasis added.

[30] L.Evans, A. Grimes, B. Wilkinson, with D. Teece, "Economic reform in New Zealand 1984-95: the pursuit of efficiency", *Journal of Economic Literature,* 34: 1856-1902, p.1895. Emphasis added.

[31] Donald Brash, "Faster growth? If we want it", paper to Catching the Knowledge Wave conference, 1-3 August, Auckland University, 2001. Emphases added.

agenda in New Zealand stalled somewhat in the mid-1990s and, in some respects, even took a few backward steps". It urged an agenda that included: further labor market deregulation to reduce delay of dismissal; further reduction of "explicit and implicit barriers to trade and investment, including tariffs"; and more privatization.[32]

The economist Paul Dalziel asks the question that the others do not ask, of what would have happened if New Zealand had implemented reforms on a scale more commonly accepted in other developed countries.[33] He establishes that Australia is the best counterfactual, on grounds of structural similarities, free trade and free movement of capital and labor, and very similar economic performance before 1984 (apart from two specific external shocks to New Zealand's per capita income in 1967/68 and 1977/78). He finds, first, that Australia had a significantly more moderate, gradual set of reforms after 1984. He finds, second, that New Zealand's economic performance relative to Australia's after 1984 was much inferior, particularly in terms of average GDP, employment growth, and labor productivity. He finds, third, that the bottom 40 percent of the New Zealand population experienced an average household real income *fall* of 5 percent between 1984 and 1996 (within which the bottom decile experienced a fall of 9 percent), while the top 10 percent experienced an average household gain of 30 percent.

This evidence suggests that New Zealand may well have had better economic performance had it followed a more moderate reform path—not better for the top 10 percent, perhaps, but better for the rest. Some defenders of the New Zealand route say that political circumstances made an "all or nothing" jump necessary in New Zealand, but not in Australia. But economists at the time and still today, as we have seen, defend the reforms not as the only feasible choice in the political circumstances but as economically optimal.

The National Response

The trends in New Zealand's economic performance should engender if not a sense of national emergency then at least a sense of a critical national challenge, the response to which has to be led by the government. As I suggested earlier, the option of sinking gently in the world income hierarchy while the population gets on with living full and non-materialistic lives is not an option, especially because of network effects. Once a threshold density of skilled people is lost the rate of outmigration is likely to accelerate, companies and public organizations will have increasing trouble meeting staffing needs, the quality of public services will decline, the tax base will erode, and so on. My

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[32] Sally Shelton-Colby, deputy secretary-general of OECD, speech to Knowledge Wave Conference, 1-3 August, 2001, Auckland University.

[33] Paul Dalziel, "New Zealand's economic reforms: an assessment", typescript, July 2001.

hypothesis is that it becomes very difficult for a country to rejoin the organic core once it has fallen out. Think of Argentina.[34]

Moreover, New Zealand's small population size and distant location makes these network effects especially dangerous. Small nations (like small towns) suffer from disadvantages in technology-intensive sectors because they are more likely to lack the critical minimum mass to form innovation clusters and enter frontier-technology sectors. As a result they suffer high out-migration of highly skilled people, and their ability to attract and retain highly skilled immigrants is limited. Countries like New Zealand and Canada have become short-stay entrepots for high-skilled human capital from developing countries en route to more permanent residence in Australia and the United States respectively.

Large population size increases the probability of having a critical mass of highly skilled individuals in highly specialized fields and therefore of supporting the frontier-technology sectors that will attract more highly skilled individuals. For the formation of innovation clusters, it is the absolute numbers that matter, not the relative numbers (and not "comparative advantage"). Consequently data such as number of scientists per 100,000 population are not very meaningful. New Zeland scores far higher than India by this criterion. But New Zealand has no global innovation clusters and India has at least five (Bangalore, Pune-Mumbai, Delhi, Chennai [formerly Madras] and Hyderabad), because India has far higher absolute numbers of scientists and engineers.

There are exceptions to this story: small population countries with innovation clusters—including Denmark, Finland and the Netherlands in Europe; and Singapore in Asia. However, they are all highly integrated parts of a regional economy with a supra-national innovation system in which high-skilled immigrants are important. In the Singapore case, the government has aggressively—with pro-active industrial policy--sought out multinational corporations and encouraged them to put R & D facilities on the island, so as to integrate the economy with national and regional innovation systems based in Europe, North America and Japan.[35]

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[34] Peter Mawson and Grant Scobie, "Climbing the OECD ladder", above, calculate how much faster NZ would have to grow over varying time periods to obtain a per capita income equal to the OECD median. They conclude, "New Zealand would need to perform significantly better than higher ranked countries for a sustained period if we are to move up the OECD ladder. It appears more likely that New Zealand's ranking among the OECD countries will continue to fall".

[35] My argument about the disadvantages of small population size runs against the argument of some economists. They say that in conditions of global free trade, "even relatively small cultural, linguistic or ethnic groups can benefit from forming small, homogeneous political jurisdictions [states]", whereas "In a world of trade restrictions, large countries enjoy economic benefits, because political boundaries determine the size of the market." (A. Alesina, E. Spolaore, R.Wacziarg, "Economic integration and political disintegration", *American Economic Review*, 90 (5), 1276-96, December 2000, p.1276). It may be broadly true across the sweep of history that "the economic benefits of country size are mediated by the degree of openness to trade", and therefore that "the history of nation-state creations and secessions is influenced by the trade regime". It may also be true—though these economists do not mention this--that technological changes in industrial production over the past two decades have led to falls in economies of scale—falls in the minimum size of plant and production-batch

The case of Taiwan serves to remind us that distance is not necessarily fatal. Taiwan has a vigorous innovation cluster around the Hsinchu Science Park which is tightly linked to Silicon Valley firms. The distance has spawned a category of people known in Taiwan as "astronauts" for the amount of time they spend in the air going backwards and forwards between Hsinchu and Silicon Valley. (So much for the argument that the internet is making business travel obsolete.) In New Zealand's case, the advent of supersonic or suborbital mass transport—allowing resident businesspeople to fly up to Asia and back in a day—would hugely improve its prospects of becoming a high quality of life regional magnet for headquarters' functions. But the chances of such an increase in travel speed within the next two decades are remote.

In the meantime, it is for the government and the political parties to lead the strategy for reversing New Zealand's decline. NGOs and "civil society" have to be involved, but the strategy cannot be the sum of their agendas. Here I emphasize several points about an organizational structure for formulating and implementing such a strategy.[36]

First, there needs to be a "pilot" organization charged with formulating and steering an industrial policy, located in the heartland of government and charged with advising on core economic parts of the strategy as well as more "social" issues. It should be separate from and probably superordinate to Treasury. Perhaps it could function as a think tank for the cabinet, and be directly responsible to the prime minister or deputy prime minister. It should be constituted quite differently from the now abolished Planning Council, which was tiny, placed far out on a limb, and given a focus mostly on soft-nosed consultation-intensive "social" issues, presumably to make it as irrelevant to Treasury as possible. In my conception the pilot agency would provide cabinet with another source of advice to Treasury's, and Treasury would find itself facing some competition for a change.

Second, there needs to be, separately from the pilot agency, an office in the ministry of science and technology to coordinate an immigration and diaspora policy targeted at increasing New Zealand's utilizable base of scientists, engineers, businesspeople, whether resident in New Zealand or

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needed to reach economies of scale; which also raises the relative benefits or offsets the relative costs of small population size, helping to keep small-population-size states viable. However, these effects are now swamped, I suggest, by the combination of (a) the critical minimum mass of highly skilled people needed to support innovation clusters (and good public services, and the like), plus (b) intensifying international competitition for highly skilled people. The combination puts small-population-size states at a big disadvantage.

[36] These suggestions come out of my research on East Asian development. I learned during the Knowledge Wave conference that the Labor government led by Helen Clark has already moved to establish an industrial policy approach along the same lines. This is not an accident. I spoke to the Labor Party caucus about these ideas while the party was in opposition. More importantly, Brian Easton has injected them into the party's thinking. His pamphlet, *Getting the supply-side to work,* New Zealand Engineering Union Inc., Wellington, 1994, helped to shape the party's thinking, and the pamphlet gives a detailed summary of my industrial policy suggestions in *Governing the Market*.

abroad. The operational work might be done by a non-profit corporation, but the government has to be involved in the planning and coordination with different parts of the public sector and business.

Third, the present government (which was elected in late 1999) should strengthen its newly created Science and Technology Advisory Council. Taiwan's council is a good model. It has comprised a mix of Taiwanese (resident in Taiwan and abroad) and non-Taiwanese, including people like a former chief scientist for IBM, a former French government science advisor, a Silicon Valley venture capitalist. It has met roughly every six months, once in Taiwan, once abroad. It scrutinizes plans for new ventures in Taiwan; and it brings its collective knowledge of technology developments on the world frontier to the attention of the Taiwan government. Crucially, it is chaired by a senior government minister-at-large, and served by a sizable secretariate; and its members are paid well enough for them to take it seriously rather than honorifically.[37] New Zealand's, in comparison, is on a very small scale, and includes only resident New Zealanders. The Taiwanese very deliberately included non-Taiwanese, who would be outside the factional plays of a small research community and broaden the range of expertise to be drawn upon.

Fourth, national and regional governments should devise a strategy for creating one or more high tech clusters in close association with universities, drawing on the experience of deliberately created ones like Cambridge (UK) and Hsinchu Science Park (Taiwan). Generous public funding may be critical to entice a number of high profile firms into a cluster, whose presence will then pull in other firms without the need for public funding. The High Streets of some English towns have been saved from malling by local governments subsidizing flagship shops which attract others in their wake. Even *The Economist* has written approvingly.

Finally, consider "task forces" as a device for overcoming rigidities in civil service employment contracts that make it difficult to recruit highly skilled, up-to-date people into the bureaucracy. Again, Taiwan is a case in point. Faced with the reluctance of bright Taiwanese graduates from places like MIT not willing to work in the public sector if it meant having to take the standard entrance exam and accept politically-determined civil service salaries, but needing to get such people in to steer the technological upgrading policies, the government allowed the use of task forces composed of dozens of these kinds of people, working on flexible employment contracts. One such task force was the Factory Automation Task Force, dedicated to visiting factories up and down the country to press for and advise on factory automation (though when it was established in 1983 it found that the first priority was generally not automation, but relatively cheap re-arrangement of the factory floor). When its teams recommended that a factory purchase a machine not then in use in Taiwan, the

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[37] See Wade, *Governing the Market*, p.212-3.

cost of the import could be met from a special innovation fund, the manufacturer paying only if he decided to keep the machine after several months of trial.[38]

The chief lesson to learn from the East Asian cases is that national governments and populations do not have to accept their "fate"—in the case of East Asia in the 1960s and of New Zealand today, the fate of specialization in low value-added activities. But throwing off that fate does require an active industrial policy, which must include immigration and diaspora policy as well. The industrial policy has to be informed by Schumpeterian economics more than neoclassical economics, by ideas about technological learning, networks, clustering, path-dependence, small pushes yielding big cumulative effects. The policy should not be "big" in terms of budgets or (Muldoon-style) "national champions". It should aim to encourage and nudge, not to make offers that cannot be refused. Above all, it requires high-level commitment in the government and in the civil service that this is the way to go, and some protection from the volatility of electoral politics.

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[38] Wade, *Governing*, p.206, p.212 ff.