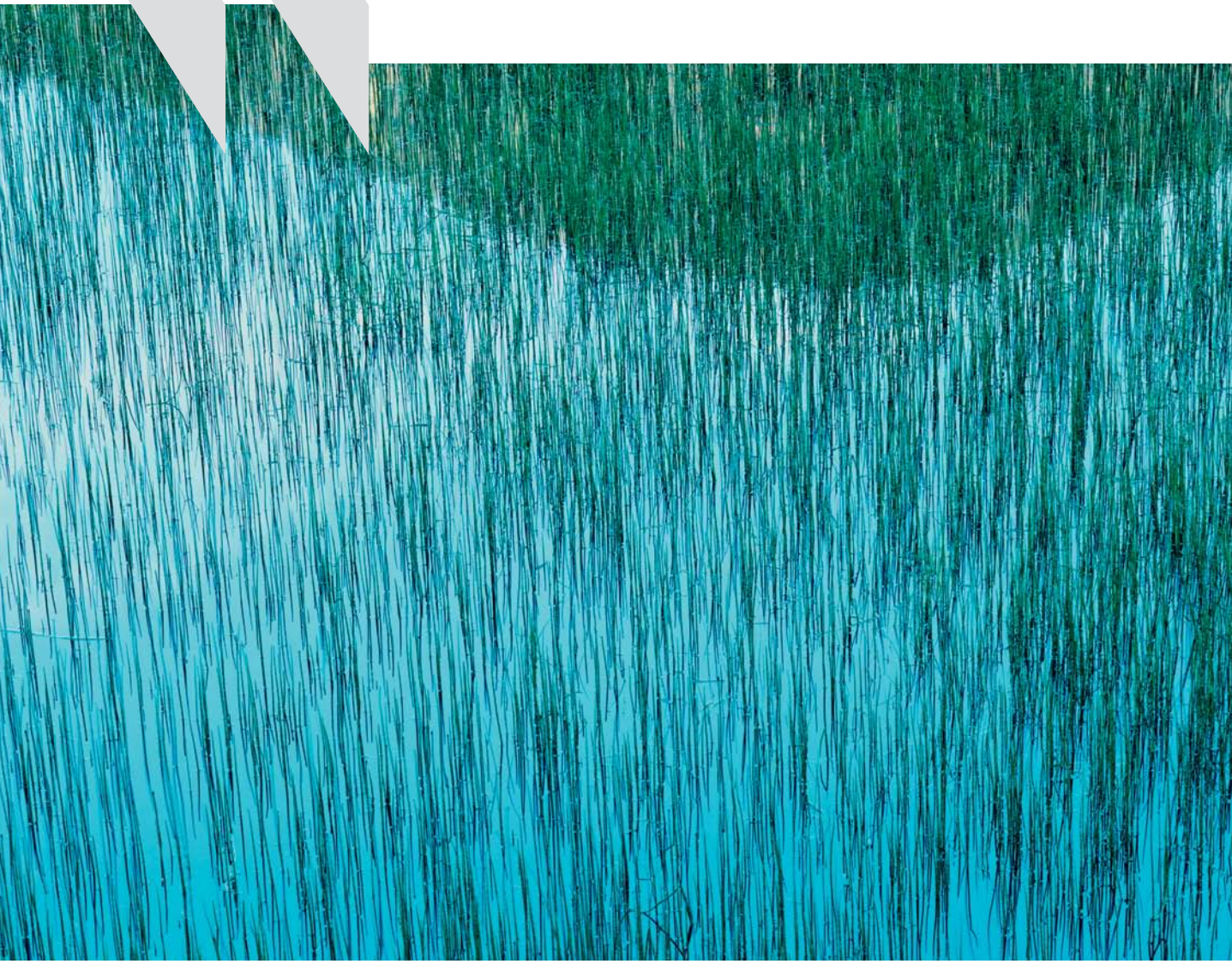
OECD Economic Surveys

NEW ZEALAND



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The economic situation and policies of New Zealand were reviewed by the Committee on 10 March 2009. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 25 March 2009.

The Secretariat's draft report was prepared for the Committee by Alexandra Bibbee and Yvan Guillemette under the supervision of Peter Jarrett. Research assistance was provided by Françoise Correia.

The previous Survey of New Zealand was issued in April 2007.

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BASIC STATISTICS OF NEW ZEALAND

THE LAND

Area (1 000 km^2)	268.0
Percentage of total pasture and arable land, 2003	51.3

Urban population,* percentage of total (30 June 2008)	78.2
Population of major urban areas (30 June 2008, 1 000 persons):	
Auckland	1 313.1
Wellington	381.9
Christchurch	282.2

THE PEOPLE

Resident population, 31 December 2008 (1 000)	4 291.9
Inhabitant per sq. km	16.0

Civilian employment, 2008 (1 000)	2 168.2
of which:	
Agriculture, forestry and fishing	150.7
Manufacturing	273.8
Trade (wholesale and retail)	487.2
Education, health and community services	377.1

PARLIAMENT AND GOVERNMENT

Present composition of Parliament:	
National Party	58
Labour Party	43
Green Party	9
ACT New Zealand	5
Maori Party	5
Jim Anderson's Progressive	1
United Future	1

Present Government: National Party-led
Next general election: November 2011

PRODUCTION (2008)

Gross Domestic Production (NZD millions)	180 444
GDP per capita (NZD)	42 268

FOREIGN TRADE (2008)

Main exports (percentage of total):	
Dairy products	22.1
Meat and edible offal	12.0
Forest, wood and paper products	7.9
Machinery and equipment	5.8

Main imports (percentage of total):	
Machinery and transport equipment	34.6
Manufactures	16.3
Mineral, chemicals, plastic materials	33.5
of which:	
Mineral fuels, lubricants, etc.	17.8

THE CURRENCY

Monetary unit: New Zealand dollar

Currency units per US dollar, average of daily figures:	
Year 2008	1.4255
March 2009	1.8808

* Defined as the population in the 30 main and secondary urban areas.

Executive summary

The global crisis is hitting New Zealand, at a time when a difficult domestic adjustment is underway. *Its economy is among the most indebted in the OECD. Falling asset prices and a slump in credit demand mean that a process of debt reduction has started. Nevertheless, persistent, large current-account deficits and a high external debt render the economy especially vulnerable in the face of the ongoing global financial and demand shocks. The economy was already in recession during 2008 and is likely to remain so throughout 2009, before recovering only hesitantly in 2010, as major deleveraging continues. The banks, though fundamentally sound, are heavily reliant on foreign borrowing, much of it short-term, and must adapt by diversifying and lengthening the maturity of their funding. Households, buffeted by wealth losses and rising unemployment, are beginning to increase saving from historically low rates. Firms, faced with shrinking demand, a much more uncertain business environment and tougher financing, are cutting employment and investment. These forces, along with the large real depreciation of the exchange rate, should over time encourage a much-needed shift of resources away from housing and consumption into tradables production.*

Macroeconomic policies are, for now, focused on supporting domestic demand, although fiscal policy needs to continue to ensure that public debt stays on a sustainable path. *In response to the slowdown, the Reserve Bank has lowered the official cash rate by 5¼ percentage points since last July, to 3 per cent. Fiscal policy is injecting stimulus of some 5% of GDP during 2008-10. In this light and with the sharp projected deterioration in public finances, monetary policy should be the primary tool used to provide further stimulus. Indeed, the much improved inflation outlook allows scope for further easing. Given the risks to the government's credit rating and to market confidence and the heavy dependence on foreign debt funding, there is little room for more fiscal expansion. It is crucial that the new government's first budget this May delivers a credible consolidation plan.*

Boosting productivity growth is critical for closing the substantial income gap with other OECD countries. *Although the quality of New Zealand's regulatory regime is generally high, it has fallen relative to other OECD countries. Even if a cyclical improvement is likely following the downturn, a durable pick-up in productivity growth with high employment will require structural policy changes. Government ownership should be reassessed to spur competition, notably in transport and energy, and beneficial infrastructure projects should be undertaken. Regulatory quality and uncertainty should be tackled, starting with the new Emissions Trading Scheme and the Resource Management Act. A major goal should be to create a more welcoming environment for business and labour with fewer tax distortions to saving, investment and work incentives. Public-sector productivity should also be increased.*

Rising health-care costs are the biggest threat to long-run fiscal sustainability. *Health spending has grown rapidly over the last decade without significant increases in health outputs. Population ageing will multiply demands on the system a decade or so hence, in addition to technology-cost pressures. With the risk of a baseline level of debt much higher than expected before*

the crisis, controlling future health (and pension) costs is even more important. Reforms should strive to improve incentives. Central control over devolved purchasing agents should be eased, giving them autonomy and responsibility for efficient allocations. The health sector should build on existing momentum towards greater District Health Board collaboration in regional planning and seek to achieve greater contestability among public hospitals and with private providers so as to stimulate hospital efficiency. GPs should be given stronger incentives for both prevention and efficient care. A greater role for private insurance and provision could be envisaged so as to spur competition and burden sharing.

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Assessment and recommendations

Global shocks have hit New Zealand's economy hard

Like its OECD counterparts, New Zealand's economy has been badly affected by the international economic crisis, but it also suffers from long standing domestic imbalances that were accentuated by the earlier period of excessive global liquidity and low risk aversion. In the early stages of the crisis, New Zealand seemed well positioned to escape its worst effects. Its banks had almost no exposure to sub-prime mortgages or other "toxic assets". When the recession began in early 2008 it could be attributed to domestic monetary tightening, the early stages of an overdue housing market correction and temporary drought conditions. As international turmoil intensified, however, it became clear that New Zealand would not escape a deeper recession, and in early 2009 macroeconomic indicators deteriorated significantly. New Zealanders had in fact been caught in much the same spiral of global excess liquidity, surging leverage, soaring asset prices and under-valuation of risks by lenders and borrowers that had taken hold globally. Households' indebtedness reached 160% of disposable income – and, in aggregate they cut their saving, possibly in the mistaken expectation that ever appreciating house prices would fulfil their future savings needs, notably for retirement. As already meagre personal saving fell further, and business borrowing increased strongly, even healthy corporate profits and steady government surpluses were insufficient to finance booming private consumption and housing investment. Hence, much of the financing came from abroad. The results were excess demand pressures, a widening in already unsustainable current account deficits and rising net foreign indebtedness (93% of GDP at end-2008).

The crisis has magnified the risks surrounding the high current account deficit

As a commodity exporter, New Zealand had enjoyed record gains in the terms-of-trade, especially late in the cycle, and these gains further nourished its asset-income-spending spiral. The inevitable bursting of the commodity-price bubble helped reverse this cycle. In addition, the global recession is shrinking exports – although less so than for many countries – intensifying the domestic downturn and reducing the economy's capacity to service its external debt (mostly denominated in NZ dollars). The largely foreign-owned banks remain well capitalised, although they are heavily reliant on short-term foreign wholesale funding. Heightened risk aversion and a global reduction in liquidity has led to a concern that banks may not be able to refinance foreign funding lines as they fall due. This underscores the country's vulnerability due to its large current account deficit and

high accumulated stock of foreign debt. Stabilising this debt in relation to GDP would require halving the current account deficit to 4-5% of GDP. Reducing it to a level that would lessen macroeconomic vulnerability would almost certainly require a larger adjustment.

The moment should be seized to confront the need to boost productivity

New Zealand is paradoxically at the forefront of the OECD in adopting policies in many areas that have been shown to lead to high per capita income, and yet it still ranks toward the bottom end of the OECD's productivity league. This performance has many natural and hence unavoidable causes, such as the economy's small size and geographical isolation. But the root of the problem is a structural deficiency in the capacity to produce tradable goods and services. Raising productivity growth therefore remains the greatest medium-term challenge. The new government has recognised this issue and pledged to catch up with Australian living standards by 2025. This would imply raising average annual per capita income growth to 3.3% from only 2.1% over the past decade, which in turn would require a much higher rate of productivity growth, given that labour input is already at very impressive levels by OECD standards. *The crisis should thus be seized as an opportunity to push forward the nation's productivity agenda*.

A deleveraging process is reducing demand

The global crisis is contributing to a needed deleveraging by households and firms. Demand for credit has dropped away very sharply, and lending terms have tightened somewhat. Overall bank credit is now shrinking, and falling house prices are impairing households' net worth. Steep declines in global commodity prices, potentially amplified by a revival of export subsidies in other countries, are hurting farm incomes and reducing the overvaluation of farm properties. Unlike most previous recessions, which tended to start in the business sector, this one is dominated by a drop in household demand. Balance-sheet adjustments imply reduced consumption for as long as it takes to unwind excessive leverage. A second stage of the cycle is now beginning, reinforced by the downturn in global trade. Lower corporate profitability, increased uncertainty about the business environment and financing difficulties are leading to declining business investment and hours worked. Weakness in labour-market outcomes and in household incomes could further aggravate the housing correction, intensify the drop in consumption and put further pressure on businesses.

Monetary policy is the first line of defence

Policy makers have moved aggressively to support demand and put a floor under a potentially vicious downward spiral. In this they have been helped by greater room for manoeuvre than in most other OECD countries, the result of relatively conservative monetary policy during the last phases of the boom and a very low level of gross public debt. The Reserve Bank has lowered its policy interest rate by 5.25 percentage points since July 2008, to 3% currently, and has facilitated access to bank liquidity through a series of other measures. New Zealand displays a structurally higher neutral rate of interest than most other developed OECD members, a reflection of its structural imbalances and

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comparatively high inflation expectations. *The Reserve Bank still has room to go further in responding to deteriorating economic conditions*. Despite widening credit-risk spreads, borrowing costs for households and businesses are falling relatively sharply, and the currency has depreciated significantly, which will be critical for external adjustment. Falling core inflation and easing inflation expectations further increases monetary-policy leeway. This should help set the stage for an eventual recovery.

Further fiscal stimulus should be avoided

Fiscal measures can increase employment and demand fairly quickly by way of infrastructure projects and the like, provided they can be implemented in a timely fashion. Tax cuts are less potent as demand boosters but could bolster confidence and assist balance-sheet adjustments. Already, recent and planned tax cuts and accelerated infrastructure spending will provide a fiscal expansion equal to approximately 5% of GDP over the two financial years ending June 2010. The government has also helped shore up confidence in the banking sector by introducing an optional retail-deposit guarantee, providing explicit depositor protection for the first time in New Zealand's history. To help secure access to term funding the government also offered temporary opt-in insurance for wholesale bank funding. Such policy support will attenuate the downturn, but substantial downside risks remain. The banking system's ability to secure foreign funding is currently reliant on the government's wholesale guarantee. The effectiveness of this guarantee depends on the perceived creditworthiness of the government as guarantor. Heightened risk around the sovereign credit rating due to a projected sharp rise in indebtedness implies that, despite the public sector's net financial asset position and a still moderate budget deficit this year, *there is little room for further fiscal expansion*. If, however, any measures were to be undertaken, they should be carefully designed to provide timely support, while being easily reversible, with a path back to a fiscally sustainable position clearly laid out. In assessing the scope for any further policy stimulus, either fiscal or monetary, the authorities will need to be conscious of the risks of triggering a disorderly or severe exchange-rate adjustment.

Policy makers should be beginning to devise exit strategies

With the world's central banks pumping vast amounts of liquidity into money markets and many Treasuries flooding the international bond markets with new issues of sovereign debt, policy makers everywhere, including in New Zealand, need to begin to plan for a withdrawal of stimulus and other extraordinary measures when the recovery takes hold. While the financial shock is likely to shrink global potential GDP growth, at least for a time, a significant output gap is likely to open up. As it begins to close, the overall degree of stimulus will have to be reined in. Fiscal consolidation is likely to have to start first in light of the outlook for public finances. Although the OECD's projected low of 2% for the official cash rate would be exceedingly expansionary in normal times, it will be important to ensure that the eventual recovery is firmly established before material amounts of monetary stimulus are withdrawn. *The twin challenges will be to avoid moving too soon and stalling the recovery as against keeping the policy stance too loose for too long, leading to a strong pickup in inflation. Furthermore, once the financial crisis has passed, the wholesale and retail deposit*

guarantees should be removed. Consideration should then be given to implementing a well structured, self-financing retail deposit insurance scheme that minimises moral hazard.

Fiscal policy expansion in the short term needs to be embedded in a consolidation plan for the medium term

The recession, combined with current policy settings, ends 14 years of continuous surpluses. In December 2008 the Treasury projected, based on unchanged policies, a period of structural deficits, with gross debt rising to 57% of GDP by 2023. The new government has stated that such debt levels would be imprudent. As a first step it committed to reviewing the efficiency of all public outlays, eliminating unnecessary expenditures and cancelling any unfunded spending commitments of the previous government. A more substantive response will need to be set out in its first budget in May. This will be particularly challenging, given the deterioration in the economic outlook in the intervening months. *It is nevertheless vital to present a credible medium-term programme that will re-establish a structural surplus. Either this surplus would need to be sufficiently large to ensure significant net public-sector assets before demographic pressures intensify or else the government would need to begin to scale back future health and pension spending. Central government spending caps have been shown to be a particularly successful means of fiscal consolidation in OECD countries that have adopted them, and should therefore be considered by New Zealand. Adjusting the revenue baseline for terms-of-trade cycles would likewise help to prevent temporary revenue increases from translating into permanent spending obligations.*

A large, imperfectly understood prosperity gap remains, due in part to geography and to policy deficiencies

Whereas New Zealand had a higher living standard than the average OECD country in the early 1970s, relatively low labour productivity growth since then has opened up a large income gap relative to the OECD average and an even greater one with leading countries such as the United States. The poor productivity performance is explained to some extent by New Zealand's special geographic situation, which hinders the transfer of human, physical and technological capital from abroad, but also to sub-optimal policies in a number of areas. The country appeared to be on the right policy track with its earlier market-oriented reforms. But the policy focus on productivity and growth eroded during the years of economic buoyancy, while other countries advanced. Notably, a large amount of new regulation, at times poorly designed, co-ordinated and focused, was introduced. Such measures have increased the costs of doing business and sent bad signals to foreign investors. The incoming government has taken some steps to reverse this trend. *First*, it established a new ministerial portfolio of regulatory reform. *Second*, it is reviewing key regulations thought to have adverse effects on productivity. *Third*, it has set up a task force to develop the principles for future regulatory management.

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Pursue greater international economic integration

Greater international economic integration can reduce the "effective distance" between New Zealand and its economic partners. To this end, the government should strive to create the region's most attractive business environment. This requires structural policy changes in many areas, from lowering the costs of moving people, goods, capital and ideas between New Zealand and the rest of the world to ensuring domestic policy settings make it attractive to innovate, locate in or do business with New Zealand. Given that so much of New Zealand's prosperity is due to its comparative advantage in commodity exports, *it should facilitate maritime trade to the greatest possible extent with the goal of reducing inbound and outbound shipping costs to meet the standards set by the OECD's most efficient members, whose costs are some 25% lower.* Although the ports are corporatised, many have strong local-authority shareholding, with mixed agendas. *Ownership changes and consolidation around fewer port companies are likely to be integral to enhancing efficiency in this sector.* As well, capital investments can be encouraged by creating a welcoming environment for foreign direct investment. To do so *New Zealand should eliminate FDI screening requirements, or, at a minimum, shift the burden to the government to demonstrate harm to the economy before turning down an investment proposal.* Since taxes on capital income are comparatively high, *it should focus its tax-reform agenda, as fiscal conditions permit, on cutting its corporate tax rate at least enough to match the OECD average. It should also shrink gaps between the company, personal, trust and portfolio investment entity rates to reduce investment distortions and shift the tax base away from income and towards consumption and immobile factors, including housing.*

Improve public-sector efficiency and remove infrastructure bottlenecks

There should be a focus on raising public-sector efficiency by curbing growth in public expenditures and subjecting existing and new programmes to a rigorous cost-benefit test that takes into account the economic costs of raising tax revenue. Raising public-sector efficiency also means limiting government ownership and spending to core sectors and divesting assets in non-core sectors such as electricity generation and transport. Infrastructure bottlenecks, particularly in roads, electricity, and telecommunications may have discouraged investment and constrained productivity growth. In recent years, however, plenty of resources have been committed to infrastructure projects, many of which are now in the works, though it will take some time for the economic benefits to be apparent. A secure and reliable electricity generation and delivery system is crucial to today's developed economy. *Incentives for private investments in electricity generation and transmission could be sharpened by removing soft price caps, encouraging the creation of financial markets for hedging risks, and providing a clear and stable regulatory framework that takes into account dynamic competition effects. The demand-side response to market conditions could also be made more flexible through greater use of metering and time-of-day electricity charges.* Besides expanding the infrastructure base to keep pace with the economy, it is also important to make good use of existing infrastructure. For instance, *toll and congestion charges could help reduce road congestion and provide a market signal for the expansion of capacity.*

Ensure environmental policies do not put the brakes on growth

New Zealand is to be commended for taking its Kyoto Protocol commitment seriously, including by being the first country to introduce an all-gas, all-sector emissions trading scheme. However, because of the importance of export-oriented, emissions-intensive industries, firms and citizens at large are unlikely to accept and continue to support environmental policies that are perceived to unfairly hurt their prosperity, unless similar efforts are made in other countries. To reduce the impact of pricing greenhouse gas emissions, the trading scheme gives temporary free allocations to the most affected industries. However, it still creates uncertainty because investment is long-lived and the price of emissions when these free allocations expire is impossible to predict. The new government has announced a full review of climate-change policy, which is expected to be followed by amendments to the emissions trading scheme and other relevant policies. To increase certainty for potential investors, *the scheme could make greenhouse gas reduction targets explicitly contingent on other countries adopting similar policies and targets, or it could include a cap on the price of emission permits, as a safety valve. Care would have to be taken to avoid setting the cap too low, which could entail a significant budgetary risk*. Also, once a carbon pricing system is fully in place, *the cost of achieving a given emissions target can be minimised by eliminating emissions-reduction programmes that are not justified by an externality other than climate change*.

Improve processes around the Resource Management Act

The Resource Management Act (RMA) was an innovative piece of legislation whose basic principles – pulling together all planning/regulatory issues related to environmental authorisation for new projects while eliminating jurisdictional overlap – remain uncontested. However, its management and application need to evolve along with the problems New Zealand is facing in some areas, notably the scarcity of water and its deteriorating quality. First, *the consenting process, which appears to be mainly driven by the courts, should be streamlined, and the scope for commercial interests to use objections under the Act as an anti-competitive tool should be narrowed.The ability for competitors to disguise trade competition objections as environmental objections should be curtailed, and "security of costs" required before proceeding with appeals of regional council decisions. Limiting such appeals to points of law would also reduce the number of spurious objections*. Second, the lack of mechanisms to determine water use or pollution rights among competing users gives rise to an inefficient allocation of this crucial resource. Because water management is under their authority, *regional councils must take the lead in establishing local provisions for water trading and for measuring and consenting nutrient flows so that trading can be established*. However, because such councils do not have all the knowledge and expertise required to set limits on such flows or to design markets, *the national government should provide guidance and resources to regional councils as needed*. A bill has been introduced in parliament to amend the Act to deal with a number of these issues.

Control of health-care costs is the most pressing fiscal challenge

As in most OECD countries, health spending has been the fastest growing component of public expenditure for several decades. This has reflected health-care technology and demand pressures, the latter exacerbated by the fact that individuals do not typically pay directly for the services they receive, while suppliers have enormous influence over demand. Ongoing medical advances and rising expectations by the public of their entitlements imply that such pressures will only keep growing. In addition, demographic ageing is set to push up demand, especially for disability and long-term-care services. Official projections show that, even with policy reforms, by 2050 public health spending as a share of GDP could double, driving up the public debt by 80 percentage points of GDP over the 30 years to 2050. *This implies the need for early policy action to contain health-care cost pressures. It also underlines the urgency of averting the earlier scenario of surging gross debt over the medium term.*

Recent trends in the health-care system are disquieting

New Zealand achieves relatively good health outcomes for comparatively modest health-care outlays. Since around 2001, however, public health-care spending has grown at more than double the pace of GDP. Health-care institutions have at the same time been completely transformed: the prior market-oriented reforms in the hospital sector were reversed, and a radical reform of primary care was inaugurated. Most of the increased funding went to pay for wage awards to hospital nurses and doctors and for capitation payments to primary-care physicians. But there is scant evidence as yet of much higher output or quality achieved. Indeed, waiting lists and shortages have grown, and measured hospital efficiency has declined. While many of the objectives of the reforms were sound, mistakes were made in design and implementation. Few tools were provided to achieve their goals: purchasers' autonomy was restricted, duties were not always clarified, incentives to seek efficiencies were largely lacking, and yet substantial new funding was distributed in the hope that it would all be well used. *The new government's stated commitment to address these shortcomings within the present structure is welcome.*

The reorganised hospital sector faces inadequate efficiency incentives

The 2001 reform reorganised the hospital sector, then consisting of the corporatised public hospitals and an arms-length national purchaser, into 21 District Health Boards (DHBs) that simultaneously own the public hospitals and purchase most health-care services for their districts. The diminished emphasis on competition and profitability, together with a greater appeal to responsibility and co-operation to achieve results, were popular with both the public and health professionals. Yet the new arrangements probably went too far in downplaying incentives. *Some adjustment to enhance their role now appears necessary.*

In particular, the amalgamation of the functions of purchase and provision of services may have distorted incentives, with DHBs tending to direct business to their own hospitals, to

the detriment of private entry. This discourages potential efficiency-raising competition and exacerbates supply shortages. Though top-down budget controls have reduced DHB deficits, some hospitals remain in chronic deficit. Compounding these problems is a lack of autonomy by DHBs to spend budgets as they see fit. Perhaps because of weak internalised incentives in the first place, there is excessive emphasis on negotiating annual plans with the Ministry of Health and preparing detailed reports to demonstrate progress in achieving a multitude of objectives. The Ministry also allocates a high proportion of the DHB budgets centrally, overturning the principle of local accountability which is the DHBs' very *raison d'être*. The DHB system is also too fragmented to make capital investment decisions, where more cross-district rationalisation and specialisation may be needed to preserve clinical viability in such a small country.

Some spontaneous steps in this direction have been taken: for example, DHBs are co-ordinating their hospital planning and managements regionally. *The existing momentum towards greater DHB collaboration may lead to some mergers and increased specialisation, which should, in principle, be accompanied by greater internal contestability among hospitals. If this fails to secure improved purchasing and service delivery, then a next step would be to instil stronger incentives for efficiency through a formal separation of hospitals from DHB funders. It would be important to build public understanding and support for such an institutional change. DHB flexibility and accountability need to be strengthened. This goal would usefully be served by allowing each DHB to negotiate its own hospital wages, rather than through multi-employer agreements. There would also be benefits from paying hospitals on the basis of prospective costs and volumes within a budget-holding approach. The Ministry needs to more actively monitor performance while devolving its purchase function to the DHBs. Bureaucratic reporting burdens should be radically cut. The Ministry can also help by developing user-friendly databases of best practices, performance benchmarks, public health programmes of national scope and strategic planning.*

Primary-care reform ambitions have not yet been achieved

The 2001 Primary Health Care Strategy envisaged a primary-care system that would: *i*) close existing social gaps in health outcomes by improved access to care, particularly among the substantial Maori and Pacific Islander minorities; *ii*) engage in more preventive care to maintain population health proactively; and *iii*) develop integrated, community-based models of care able to better meet minority and immigrant needs and more efficiently manage the increasing burden of chronic care. Two instruments were created: Primary Health Organisations (PHOs); and a switch in method of paying GPs from fee-for-service to capitation payments based on patient lists. Practices were to sign up with a PHO in order to obtain capitation payments. Once-substantial co-payments fell across the board, though by less than doctors' capitation payments grew, and consultations increased, although apparently less so for the targeted groups. Primary-care physicians' incomes also trended up, and the subsequent closing of many PHO patient lists may suggest the existence of cherry-picking to discourage sicker patients and prevent new practices from entering. The PHOs' effectiveness as agents of change was highly variable, while the new models of care generally failed to take hold. *To achieve the laudable objectives of the strategy, further changes will be required. Practices should have access to capitation payments directly from the DHBs to avoid restrictions to competition by PHO "club membership" obligations. The PHOs should be either eliminated as an unnecessary new bureaucratic layer or else their role and*

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obligations must be more clearly defined, particularly as regards facilitating the development of the new clinical models, with the DHBs using part of their funding to the PHOs as a lever. Fees should be better regulated by the DHBs but balanced sufficiently with capitation payments in order to maintain doctors' intrinsic motivation to exert effort. The appropriate balance may need to be tailored to the needs of particular groups.

Private funding and provision are underutilised

Though the proportion of the population holding supplementary private insurance is relatively high, it is typically used to circumvent elective surgery waiting lists, to pay for services not covered by public insurance or to reimburse primary-care co-payments. As the latter have now been sharply reduced, the contribution of private funding to health-care costs has dwindled for rich and poor alike. This in turn has increased demand for heavily subsidised primary care, perhaps particularly by the "worried well", harming equity and boding poorly for the ability of the system to contain taxpayer costs in the future. The emergence of large, non-transparent deficits in the Accident Compensation Corporation (ACC) suggests a weakening of cost control in recent years under public monopoly insurance. *In the interests of both fiscal sustainability and health-care market competition, the authorities should consider a greater, well-regulated role for private insurance. To improve burden sharing, the recent move to extend eligibility for lower co-payments to wealthier people could be rolled back. The contestable parts of ACC should once again be exposed to competition from private insurers for accident insurance contracts. Private hospitals and auxiliary-service provision should be encouraged in parallel with the above DHB reforms.*

Severe health workforce shortages are looming

New Zealand is quite constrained in how much it can control medical professionals' wage costs because of its open market for their skills. A high proportion of locally trained doctors and nurses emigrate, while around half of all practicing doctors and nurses in New Zealand are foreign-trained immigrants. Heavy turnover of immigrant professionals implies large recruitment and training costs, however, along with greater risks of shortages. Imminent ageing of the doctor and nurse populations implies a scarcity of future capacity, against which sharply rising demands on the system would greatly increase cost inflation. *The number of slots for medical studies should be increased, and more foreign students should be accepted in the hope that many will stay on after graduation. To the extent that New Zealand cannot offer international-level specialist wages, it should work harder to create a satisfying and innovative clinical environment, giving doctors a high degree of autonomy and interaction with other professionals in the new collaborative-care settings.*

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Chapter 1

Macroeconomic adjustments in the current crisis

Even though New Zealand's banks are sound, global interdependencies and accumulated domestic imbalances mean that the economy is being affected by the worldwide financial and economic crisis. New Zealand has one of the OECD's highest levels of foreign debt, the result of sustained and sometimes large current account deficits that reflect a long period of unbalanced growth and structural deficiencies, notably a small pool of household savings and a low rate of productivity growth. These imbalances, along with the present reversals in global risk appetite and credit availability, present a risk of sudden and costly macroeconomic adjustments. As a small nation on the world's periphery, New Zealand is affected by the sharp decline in world trade, which began in late 2008 and is unlikely to be reversed during 2009. At the start of the crisis, both fiscal and monetary policies had substantial room for counter-cyclical action, and much has been done on both fronts. There remains more room for monetary policy easing than in most OECD countries, while fiscal policy is now constrained by the projected growth in debt and associated credit-rating concerns. Even so, a deep and protracted recession, involving a housing-market correction and deleveraging of household and business balance sheets, is unlikely to be avoided. As principal intermediaries between foreign savers and domestic borrowers, banks depend to a large extent on overseas funding, most of which is short term. A number of smaller finance companies, less regulated than banks, have gone bust. To maintain confidence in the banking and financial sector, new guarantee schemes for retail deposits and wholesale bank funding have been introduced, along with temporary liquidity facilities, and non-bank deposit-taking institutions have been brought under the central bank's regulatory umbrella. The main challenges for policy makers are to manage the downside economic risks posed by the current crisis, while preserving the longer-run credibility of the macroeconomic policy framework.

New Zealand's economic fortunes have reversed rapidly. It was a beneficiary of the past decade's global growth surge, in particular China's rapid expansion, which pushed up the prices of its commodity exports and lowered those of its manufactured imports. On the financial side, the global "savings glut" meant capital was readily available to fund a shortfall in domestic savings. In conjunction with interest rates that were not unduly high by domestic historical standards, but attractive to international investors, the availability of capital facilitated a housing and consumption boom. New Zealand is now being severely affected by the reversal of this supportive atmosphere: commodity prices have fallen and export markets have shrunk, while the supply of foreign credit has tightened and the external deficit is still very large by international standards. Macroeconomic policies, fortunately, are in a good position to help, although "exit strategies" are still ill-defined, as elsewhere. Deposit guarantees are being offered for the first time in the country's history, but they will need to evolve to manage moral hazard. Fiscal policy is more expansionary than in most other OECD countries, an option made possible by the government's robust financial position when the downturn began. However, the nation's high external debt will increasingly limit its scope to borrow and spend. Monetary policy has already provided significant stimulus and some further, more modest easing, is expected. The Reserve Bank has had more room to cut policy interest rates than other central banks but, as elsewhere, may eventually run the risk of keeping them too low for too long, although these risks are reduced insofar as the recovery is expected to be somewhat L-shaped (*i.e.* anaemic growth over an extended period).

The domestic repercussions of fierce global shocks

New Zealand recorded a strong increase in its output and income levels over the past 14 years, its real GDP rising on average by 3½ per cent per annum notwithstanding fall-out from the 1997 Asian crisis. The long expansion was underpinned by a confluence of factors:

- deep structural reforms and fiscal consolidation that boosted per capita potential growth;
- strong labour income growth as a result of rapid working-age population growth (largely due to high net immigration), a rising employment rate and cyclically-high wage growth in response to low unemployment;
- rapid expansion of export markets and particularly rapid gains in relatively-nearby China;
- booming commodity export prices (notably for dairy products) and the availability of cheap manufactures from China, resulting in strong terms-of-trade gains, a key source of per capita income growth;
- a housing boom kicked off by easy credit and record immigration in a context of a structural shortage of homes; and

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- an ample supply of global savings, giving borrowers ready access to credit for consumption and investment at domestic interest rates that were not overly high by historical standards.

But the large inflow of capital put upward pressure on the currency. This, together with buoyant domestic demand and rising payments abroad to service debt, led the current account deficit to widen substantially.

The ground began to shift in 2007. The international oil price rose sharply, while sustained high domestic growth put heavy pressure on capacity, intensifying skill shortages and wage and price inflation. Monetary policy tightened further, and the housing market responded with slowing capital gains, while the exchange rate finally peaked. A severe drought struck at end-2007, curtailing supply in the critical hydro electricity and farm sectors. In early 2008, the country entered a largely home-grown recession, which left it in weakened condition when the international financial crisis intensified later in the year (Figure 1.1, Panel A). Growth was negative in all four quarters of 2008 and, according to OECD projections, is likely to remain so through 2009, resulting in the longest recession in New Zealand's modern history. Only modest increases in output are expected over the following 12 months or so, with faster recovery likely to be delayed until mid-2011 (Table 1.1).

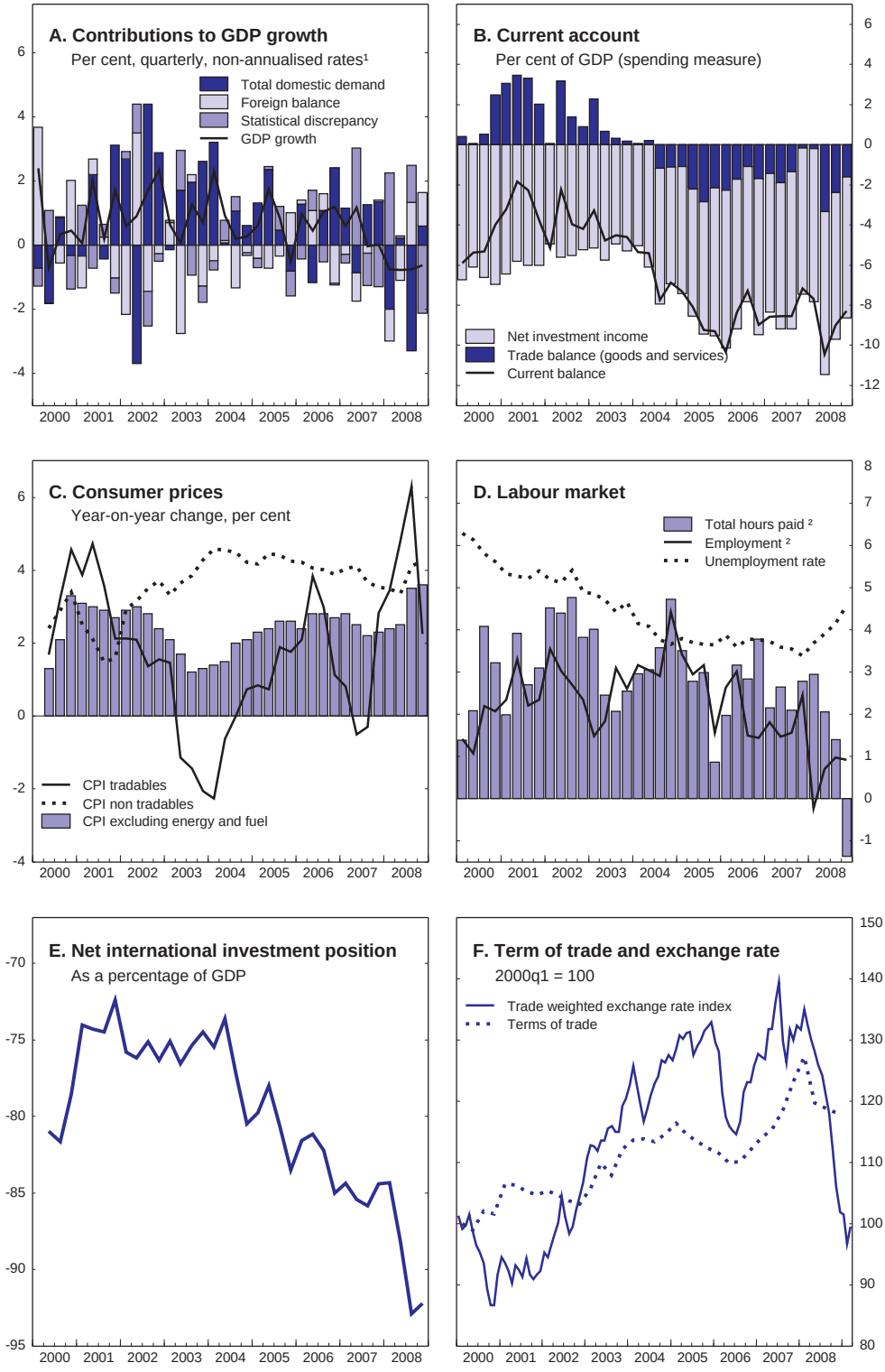
The global crisis is affecting New Zealand through both demand and finance channels. Subdued global growth is damping export volumes. The Chinese market, itself afflicted by collapsing US demand, is a particularly important one for New Zealand. The reversal of the commodity boom in the second half of 2008, particularly lower prices for dairy, is cutting

Table 1.1. **Demand, output and prices**

	2005	2006	2007	2008	2009	2010
	Current prices NZD billion	Percentage changes, volume (1995/96 prices)				
Private consumption	92.0	2.6	4.0	0.1	–0.6	0.0
Government consumption	28.0	4.6	3.9	4.0	4.5	4.5
Gross fixed capital formation	37.4	–0.4	5.0	–5.7	–19.2	–1.4
Final domestic demand	**157.4**	**2.2**	**4.2**	**–0.5**	**–3.7**	**0.7**
Stockbuilding[1]	1.3	–0.8	0.3	0.2	–1.1	0.0
Total domestic demand	**158.7**	**1.4**	**4.5**	**–0.3**	**–4.8**	**0.7**
Exports of goods and services	43.4	1.8	3.8	–1.8	–11.9	0.2
Imports of goods and services	46.7	–2.6	8.6	2.5	–17.0	0.7
Net exports[1]	–3.2	1.3	–1.5	–1.2	1.9	–0.2
GDP at market prices	**155.4**	**2.6**	**3.0**	**–1.6**	**–2.9**	**0.5**
GDP deflator	**...**	**2.2**	**4.2**	**4.7**	**1.8**	**2.6**
Memorandum items:						
GDP (production)	...	2.0	3.1	0.2	–2.8	0.5
Consumer price index	...	3.4	2.4	4.0	2.1	1.7
Private consumption deflator	...	2.8	1.6	3.4	2.1	1.0
Unemployment rate	...	3.8	3.6	4.1	6.8	7.9
General government financial balance[2]	...	5.9	5.0	2.8	–2.1	–4.9
Current account balance[2]	**...**	**–8.7**	**–8.2**	**–8.9**	**–7.6**	**–6.3**

1. Contributions to change in real GDP (percentage of real GDP in previous year). Stockbuilding is calculated as the difference between total domestic demand and final domestic demand.
2. As a percentage of the spending measure of GDP.

Figure 1.1. **Macroeconomic indicators**



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1. The contributions do not add up to the GDP growth rate because the data are chain-linked.
2. Year-on-year change, per cent.

Source: Statistics New Zealand, Reserve Bank of New Zealand and OECD.

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into rural cash flow and incomes, with significant negative impacts on the rest of the economy.[1] As NZ companies are either directly or indirectly reliant on offshore capital to fund investment, the global credit contraction is hitting them through tighter borrowing terms and difficulty in obtaining new finance from banks, debt and equity markets. The negative effect on investment would be exacerbated if access to international capital became more severely curtailed. The difficulty of continuing to finance the large external debt if foreign investors were to become significantly more risk averse is perhaps the greatest risk to the economy. Households' demand for credit has fallen very sharply, and they also face a reduced supply of credit as a result of tightened lending criteria. Together, these developments are restricting consumption and, especially, residential investment. The housing market has led the downturn. House prices have fallen by about 15% in real terms so far from their peak, resulting in a shutdown of mortgage equity withdrawal, which had helped to feed the earlier consumption boom.[2] Consumption will shrink for a time and then grow only hesitantly until household balance sheets are satisfactorily repaired. Weak consumer and foreign demand will impair business profitability and result in lay-offs and further investment declines. Rising unemployment and attendant job insecurity will add to consumers' income losses and propensity to save. Slowing wage growth is also likely to result from greater labour-market slack. The banks (and their Australian parents) are in relatively good shape. The parents have been able to raise additional capital without deep discounts to their share prices. But this could change if house prices depreciate by more than the expected 20-25% in real terms.

Corrective mechanisms are in place. Last year's drought has ended, providing a near-term fillip to production (*i.e.* avoiding an even sharper decline). As demand weakens, cheaper oil and lower price inflation more generally will shore up consumers' purchasing power (even if much of it goes to reducing dis-saving rather than consumption). The lower exchange rate, which has depreciated by some 30% on a trade-weighted basis from its July 2007 peak, will enhance investment incentives in tradable-goods sectors and allow exporters and import-competing firms to capture market share. Major policy support is also being extended. Corporate and personal income tax cuts are providing substantial underpinning (see below). Concurrently, policy interest rates have come down sharply, with a large portion being passed through to mortgage lending rates, providing relief to indebted households. Further, though more modest, interest rate cuts would be appropriate, given the anticipated large negative output gap. However, policy settings should begin to be normalised relatively rapidly once the recovery gets firmly underway in order to keep annual CPI inflation in the target band (currently 1-3%). The projections, which are keyed to the global recovery expected to be kicked off by the United States, suggest that the tightening cycle will not begin before 2011.

The global crisis is in part a structural shock that will require long overdue macroeconomic adjustments. The financial systems in the United States and much of Europe, and households in countries like the United States, the United Kingdom, Australia and New Zealand, lulled by too easy money and a general underestimation of risk, became overleveraged because of widely held expectations that housing and other asset prices could not fall. In New Zealand's case, these forces were reflected in household demand-led growth, rapid credit increases across all main sectors of the economy and rising current account deficits, the counterpart to high national saving and sizeable current account surpluses in China and other countries enjoying export-led growth. These trends

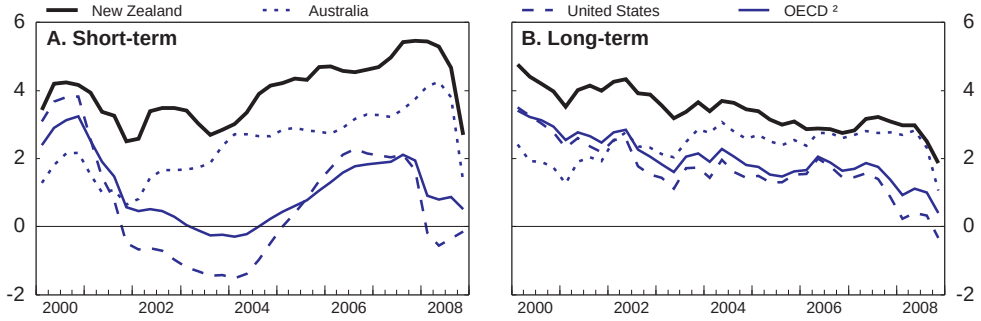
aggravated already present currency and funding risks because the current account deficits were almost entirely funded through additional heavy short-term bank borrowing abroad. Households, whose wealth was increasing while asset prices went on rising, stopped saving and were living well beyond their means. In the short term, budget deficits will expand to sustain demand. The deterioration in New Zealand's public finances may be large, with a shift from surplus to deficit of around 10 percentage points of GDP between 2007 and 2010. The parallel build-up of external public debt will partly fill the room vacated by the decline in household indebtedness. The next section investigates the macroeconomic imbalances and their adjustments in more detail.

The macroeconomic imbalances

New Zealand's economy suffers from significant macroeconomic imbalances. The current-account deficit doubled to 8.9% of GDP in the five years to 2008 (Figure 1.1, Panel B). During the same period the country's net international investment position (NIIP) has gone from a negative level equivalent to around 75% of GDP to 93% of GDP at end-2008 (Figure 1.1, Panel E). Large external imbalances are reflected in both short- and long-term real interest rates, which have been higher than in other OECD countries for many years (Figure 1.2). The large external deficit – and perhaps the negative NIIP itself – is disquieting because it is almost certainly not sustainable at its current level. As an indication, with nominal GDP growth of 6% per annum (about what New Zealand has had since 2000), the ongoing current-account deficit consistent with a long-run NIIP stable at -100% of GDP is only 5.7% of GDP (Edwards, 2007). Assuming a very plausible lower nominal GDP growth of 5% per annum, stabilising NIIP at a somewhat lower 80% of GDP (still high by international standards) would require a current account deficit of 3.8% of GDP, more than 5 percentage points lower than it is today.

Figure 1.2. **Real interest rates**[1]

Per cent



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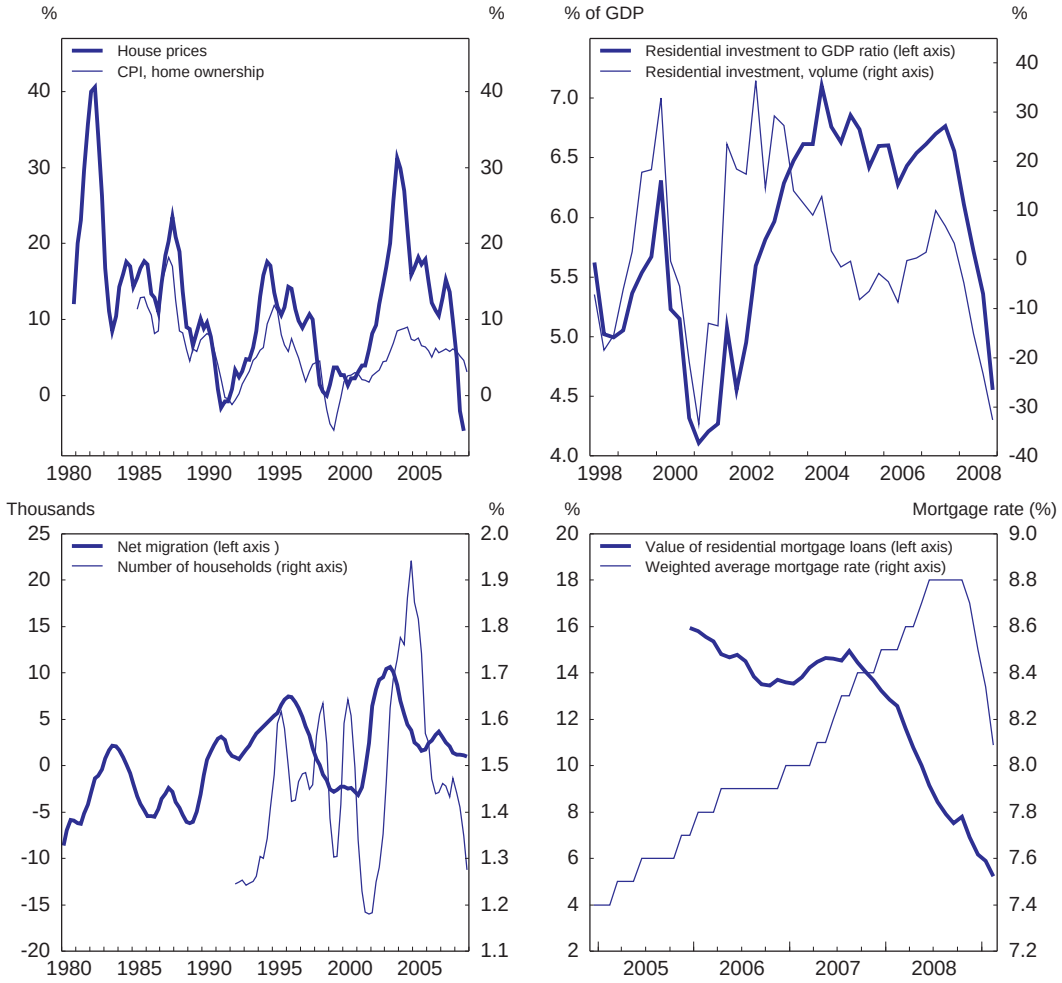
1. The real short-term rate is the 3-month market interest rate minus CPI inflation smoothed by a Hodrick-Prescott filter. The real long-term rate is the 10-year government bond rate minus CPI inflation smoothed by a Hodrick-Prescott filter.
2. GDP-weighted. Countries included in the OECD average rate are Australia, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands, New Zealand, Norway, Switzerland, the United Kingdom and the United States.

Housing and current-account sustainability

Over the 2000 to 2008 period, house prices were rising fast, at one point by more than 30% per year, approximately doubling in nominal terms (Figure 1.3). From 2000 to its peak eight years later, the average house-price-to-income ratio rose more in New Zealand than in any other of 18 OECD countries for which comparable figures exist (Figure 1.4). Rising house prices boosted the perceived wealth of home-owners and underpinned very strong consumption and residential investment spending, reversing the trade account surplus of the early 2000s when the currency had been overvalued (Figure 1.1, Panel B). Residential investment increased from 5% to close to 7% of GDP before falling again, and household mortgage borrowing also rose sharply (Figure 1.3). Banks borrowed abroad to fund this domestic credit expansion: from 2001 to 2008, close to 80% of the increase in the net international liability position happened in the "financial and insurance services" industry.

Figure 1.3. **Housing sector**

Year-on-year percentage change unless otherwise stated



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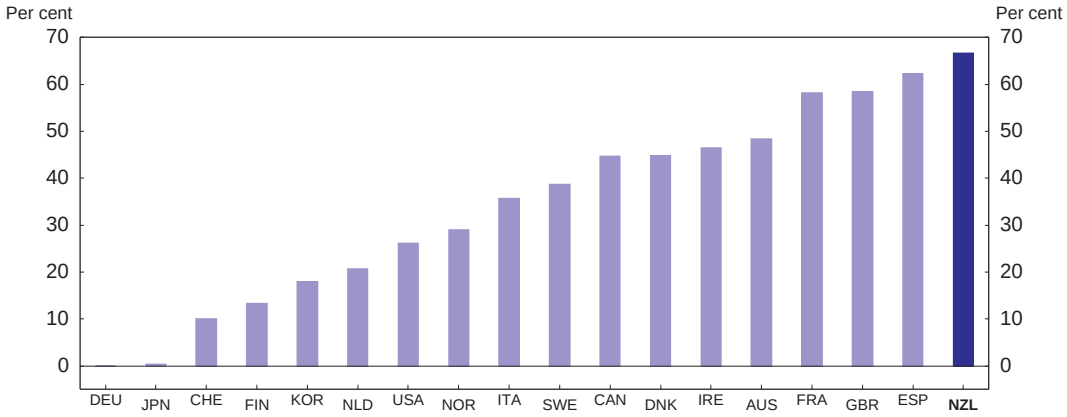
Source: Reserve Bank of New Zealand and Statistics New Zealand.

Figure 1.4. **Cumulative increase in the average house price to income ratio for selected OECD countries**

2000 to peak



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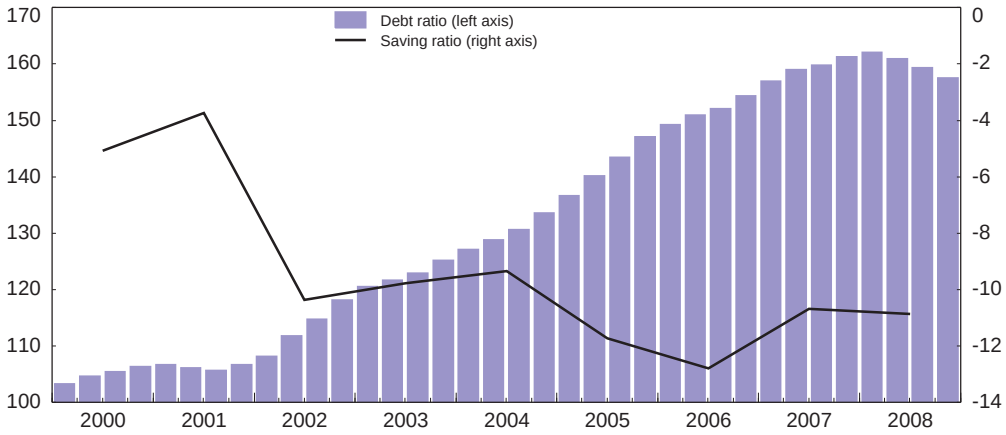
Source: OECD, *House Price Database*.

Households' expectations of capital gains from housing were strong and underpinned by a buoyant labour market. Many apparently saw scope to unlock recent capital gains – by borrowing more against their home equity – and still expected house prices to rise sufficiently over the long run to meet their savings goals. They thus saw little need to save out of current income. The result was a steep plunge in the household saving rate, which had already been negative since 1993 (Figure 1.5). Households have been officially estimated to be dis-saving to the tune of as much as 15% of income per annum, the lowest saving rate of any OECD country except Greece. New Zealand households have thus increased their dependence on property assets in their balance sheets (Table 1.2). Many now hold essentially no other assets. Thankfully, the government and the business sector have had much better saving records, though the business sector greatly increased its leverage in recent years, and the government's position is expected to deteriorate quickly in the future (see below).

Figure 1.5. **Household debt and net saving**

Per cent of net disposable income



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Source: Reserve Bank of New Zealand and OECD.

Table 1.2. **Household wealth**[1]

NZD billion, end of year

	1985	1990	1995	2000	2005	2006	2007
Housing assets	73	127	182	231	506	559	614
Financial assets	49	68	99	126	165	188	200
Total assets	122	195	281	357	671	747	814
Financial liabilities	14	28	47	74	135	152	170
Net wealth	**108**	**167**	**233**	**279**	**528**	**586**	**634**
Memorandum item:							
Housing assets as a percentage of total assets	59.8	65.1	64.8	64.7	75.4	74.8	75.4

1. The figures do not cover all assets and liabilities of the household sector. For example, they do not include holdings of equity in privately-owned businesses.

Source: Reserve Bank of New Zealand.

Correcting imbalances: sudden or gradual?

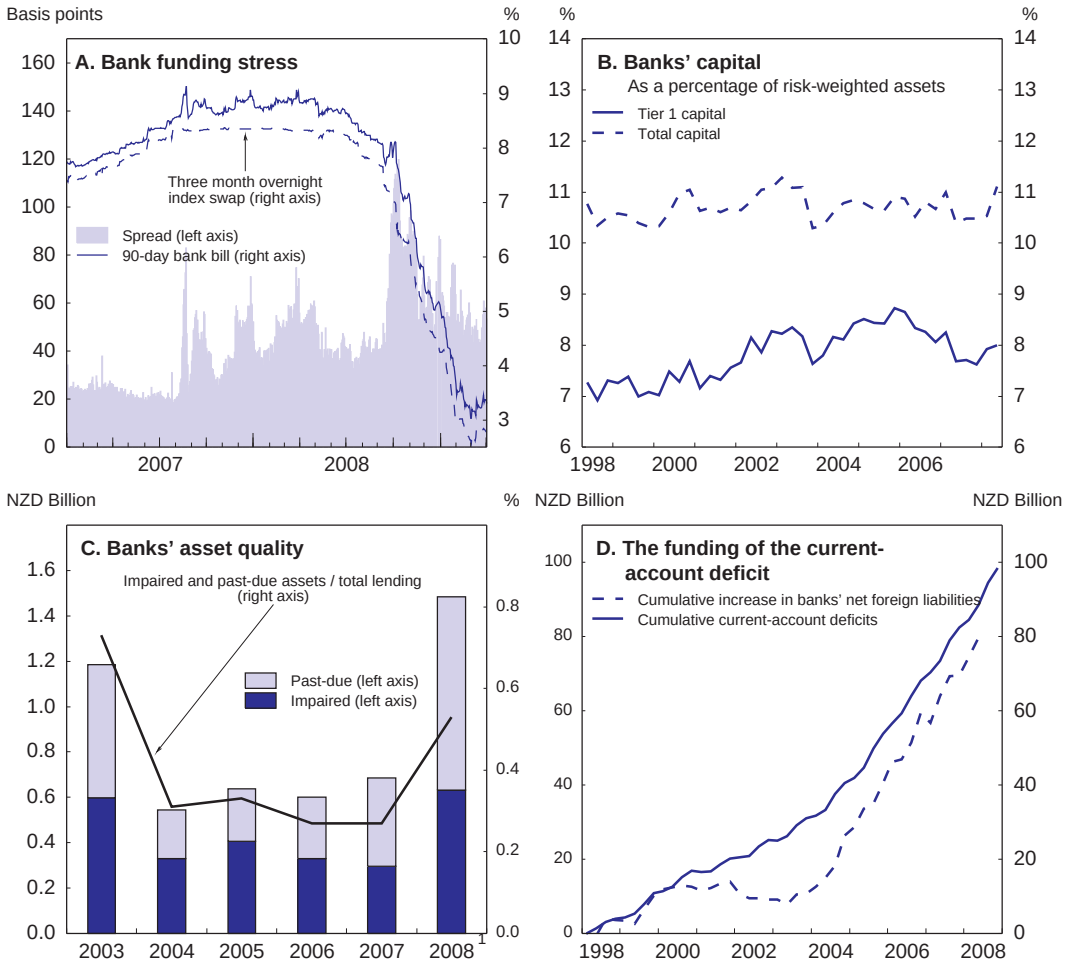
Gradual moderation of the imbalances, the likelier scenario, would not pose significant economic problems. A brutal reversal associated with a sudden stop in capital inflows, however, would be much more costly. An abrupt adjustment would most likely take the form of a precipitous change in foreign investor sentiment, leading to a further sharp depreciation of the New Zealand dollar, higher inflation, heavy labour shedding and, probably, higher interest rates. The risk of a painful adjustment is and will remain material as long as international credit markets remain fragile and the current-account deficit is not brought onto a more sustainable footing. Some ratings agencies agree. In January 2009, Standard and Poor's revised the outlook for the currency's long-term rating (AA+) from "stable" to "negative", citing "narrowing policy flexibility due to external imbalances, especially the current account deficit". It also said a downgrade could occur if the new government does not provide a credible plan to reverse the deteriorating fiscal outlook and reduce external imbalances in the May budget.

The transition to a lower and more sustainable current-account deficit requires increasing domestic saving, especially since coming to terms with the longstanding productivity challenge is likely to require more investment over time. To the extent that some of the effects induced by the international credit crisis prove durable, some of the necessary corrections have already started. Lower housing wealth stemming from less inflated house prices should push up the household saving rate. A lower exchange rate should both reduce consumer spending and prompt expenditure switching away from imports towards locally produced goods and services, as well as increased exports. Both trends will help shrink the current-account deficit. By end-2010, it is projected to have shrunk by some 3 percentage points of GDP from its 2008 peak.

Monetary policy and financial-market supervision before, during and after the financial crisis

Unlike in many other OECD countries, New Zealand's major banks, all Australian-owned, are in relatively good shape. They have not been greatly involved in many of the complex financial products resulting from securitisation that have caused significant losses for many large global institutions, nor were they heavily exposed to bad assets directly (Figure 1.6, Panel C). For instance, most mortgages are kept on the balance sheet of the lending institution, and less than 1% are funded through mortgage-backed securities. Accordingly, there has been no need for nationalisation nor capital injection into the

Figure 1.6. **Banking sector indicators**



StatLink http://dx.doi.org/10.1787/562382421305

1. As at 30 June 2008.

Source: Reserve Bank of New Zealand (2008), *Financial Stability Report*, November 2008, and Bloomberg.

financial system by the public sector, and there has been no failure, threatened or actual, of any large financial institutions.

Only relatively small finance companies that were involved in riskier lending have gone out of business. After several years of very strong economic growth and a benign lending environment, risk management in these institutions was being sidelined. Compounding the problem was the lack of regulation around second- and third-tier lenders. As the Reserve Bank tried to contain inflationary pressures by progressively raising interest rates, the weakness of certain business models started to be revealed (including cases of fraud). A number of institutions faced funding difficulties and were beset by problems of poor asset quality, related-party lending and inferior credit management, which had not been apparent in more favourable economic conditions. A large number of these finance companies (around 40) have now gone bust, but their failing did not pose systemic risks as they were all relatively small players. Generally, however, and with

appropriate regulation, OECD work shows that second- and third-tier lenders can be important to bank competition, so entry in this sector should not be discouraged.

Banking sector concerns and immediate policy responses

The banking system is, however, very reliant on non-resident funding sources, a situation reflected in the country's high external indebtedness and, therefore, the ongoing capital account surplus (Figure 1.6, Panel D). This makes banks vulnerable to shifts in the global cost of credit and risk appetite. As a result, they started being affected when trust vanished between financial institutions across the globe. This has mainly taken the form of higher spreads on their foreign borrowings and an inability to fund much beyond three months (Figure 1.6, Panel A). Because foreign borrowings are almost all hedged back into New Zealand dollars, however, the overall cost of funds has fallen dramatically as the Reserve Bank cut its official cash rate (OCR) from 8.25% in July 2008 to 3% in March 2009.

Recognising the need to ensure the availability of liquidity for the banking sector, the Reserve Bank and the government have taken a number of steps.[3] *First*, in May 2008, the Bank relaxed the securities test for access to its discount window. It agreed, for example, to take other banks' bills as collateral for a slightly higher spread, as well as highly-rated mortgage-backed securities created for the purpose. These measures were meant to ease liquidity pressures that were threatening to increase the spread between the OCR and the overnight inter-bank cash rate and undermine bank confidence in the future availability of funding, which could have threatened the ongoing supply of credit. *Second*, in October 2008, the government introduced an optional two-year deposit-guarantee scheme open to all (bank and non-bank) deposit-taking institutions. With Australia, New Zealand had previously been one of the only two OECD countries without such a scheme. However, the fees for each individual institution are not high enough to match expected future payouts.[4] The retail deposit guarantee was designed to mitigate the risk of bank runs and minimise capital flight to Australia, which had just moved to protect deposits. But since retail deposits account for just 44% of banks' total funding, this guarantee did not, by itself, ensure the stability of the financial system. Wholesale sources account for the other 56% of banks' funding, with most of this coming from foreign wholesale markets (Table 1.3). Significant concern about the ability of New Zealand's banks to source funds on wholesale markets thus remained, especially given an environment where many other countries were guaranteeing their banks' wholesale funding. *Third*, in November 2008, the government announced a temporary guarantee of wholesale borrowing by investment-grade financial institutions (with a BBB credit rating or higher) that choose to opt into the scheme. Institutions will be charged a fee, which will depend on their credit rating and the term of the security being guaranteed. Unlike the deposit guarantee scheme, fees are expected to cover losses. As of 11 March 2009, three of the four major financial institutions (ANZ National Bank Limited, Bank of New Zealand and Westpac New Zealand Limited) had been approved for the wholesale guarantee. *Fourth*, the Reserve Bank, in collaboration with the US Federal Reserve, established a temporary reciprocal currency arrangement (swap line) to address elevated pressures in US dollar short-term funding markets. The facility, authorised to 30 April 2009 but unused so far, would support the provision of US dollar liquidity to the New Zealand markets in amounts of up to USD 15 billion.

All these measures have helped shore up confidence in the New Zealand banking sector, which remains in relatively good shape compared to many other countries. Profitability has taken a hit, and the weakening agricultural and corporate sectors heighten

Table 1.3. **Structure of banking system funding**[1]

August 2008

	NZD billions	Share of total funding (%)
Retail funding	**133**	**44**
Resident wholesale funding	**40**	**13**
Non-resident wholesale funding	**127**	**42**
of which:		
Maturity less than one year (estimated)[2]	81	27
Maturity greater than one year (estimated)[3]	46	15
Total funding	**299**	**100**

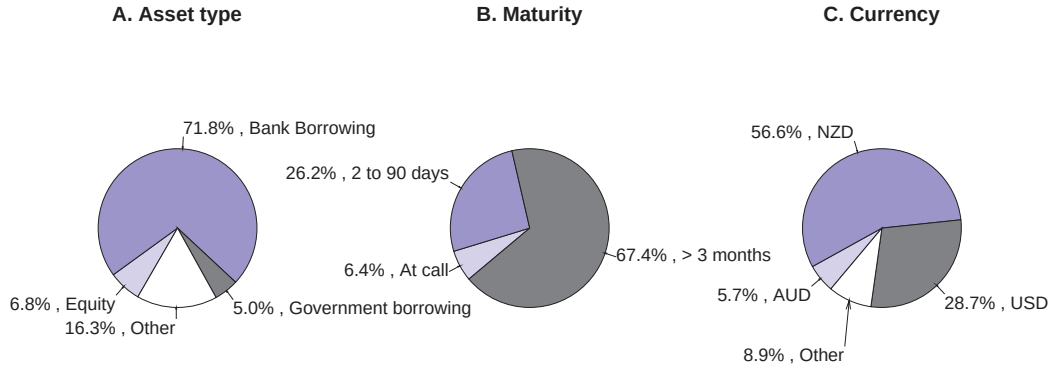
1. Table excludes domestic inter-bank lending, capital and reserves and non-funding liabilities.
2. Includes overseas commercial paper and other short-term international funding.
3. Includes overseas bond issues and other short-term international funding.

Source: : Reserve Bank of New Zealand (2008), *Financial Stability Report*, November 2008.

credit risk, but the banks are sufficiently capitalised and appear well positioned to absorb normal cyclical credit losses (Figure 1.6, Panel B). While systemic risks appear small, the recent freeze in short-term wholesale funding markets has underscored the importance of better funding structures, including regulation that addresses the long-standing concern about liquidity and refinancing risks in the banking system. This concern relates to the substantial net international liabilities, mostly comprising bank borrowing, much of which at short-term maturity (up to 90 days) (Figure 1.7). As most external borrowing is done in domestic currency or hedged back into New Zealand dollars, it is not subject to significant valuation effects associated with exchange-rate changes. This markedly reduces the risks around offshore borrowing. In an environment of more acute risks, however, the stability of these capital inflows and the availability of counterparties for foreign-exchange hedging cannot be taken for granted. And because capital inflows are largely intermediated through the banking sector, pressure for their reduction would be felt most immediately in the form of refinancing difficulties in short-term offshore bank funding markets.

Figure 1.7. **Net international liabilities**

December 2008



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Source: Statistics New Zealand, *2008 Balance of Payments and International Investment Position*, December.

Lessons for banking and financial-market supervision

Like other countries, New Zealand may benefit from taking a more explicit macro-prudential approach to financial stability. On the regulatory side, a macro-prudential approach would aim to strengthen resilience in the financial system by designing standards and codes to limit the build-up of financial and economic imbalances. Perhaps the first step in implementing such a regulatory approach to risk management is to revise bank capital requirements. New Zealand's banks have typically not been constrained by regulatory capital requirements, as they tend to hold capital well in excess of regulated levels, but global experience suggests that capital buffers can evaporate quickly. Locally incorporated banks (which include all the large ones) have been required to hold capital based on Basel II requirements since the first quarter of 2008. But the concern is that these new requirements would encourage higher leverage when times are good and hasten deleveraging in a downturn, thus exacerbating the slowdown and raising the risk of negative feedback between the financial system and the real economy. Bank capital requirements should be designed to counter, not reinforce, the natural tendency to pro-cyclicality. They should encourage institutions to build healthy levels of capital reserves during good times, for use in bad times. New Zealand has put considerable effort into trying to ensure that capital requirements are based on through-the-cycle loss probabilities. Also, the Basel Committee on Banking Supervision is currently working on ways to amend the current guidelines. Under the revised Basel approach, counter-cyclical capital ratios should be used to both restrain excesses during upswings and provide a cushion to moderate the following downturns when they do eventually materialise.

The financial crisis has exposed weaknesses in bank liquidity regulation, so another step in ensuring the longer-term stability of the financial system is to implement minimum liquidity requirements. The Reserve Bank released a draft liquidity policy in October 2008 and, following public consultation, will move to implement it. This policy supplements the existing approach, in which banks must publish their risk-management policies and certify their adequacy, with rules and guidelines on how the Reserve Bank expects banks to address liquidity-risk management. The proposed rules include minimum liquidity requirements and seek to extend the maturity of bank funding to reduce short-term exposure. More precisely, the main components of the proposed liquidity policy are: limits on a bank's mismatch positions over one week and one month; a minimum "core funding" ratio; identification of some required elements in banks' internal liquidity-risk management arrangements; greater specificity on the required content of public disclosure; and required reporting to the Reserve Bank on a limited set of important indicators of liquidity and liquidity risk (Reserve Bank of New Zealand, 2008b). The intent is to ensure that banks meet some minimum standards, while still allowing flexibility as to how they meet them. Banks will be allowed a transition period to adhere to the new liquidity policy, with full compliance required by the end of 2010.

On the supervisory side, a macro-prudential approach would assess threats to financial stability by looking at the broad economic and financial conditions that can contribute to a build-up of risks to the financial system and to the economy as a whole. This requires greater co-operation between the supervisor and individual institutions to design and implement robust risk-management practices that are grounded in a long-term, through-the-cycle perspective, along with appropriately designed stress tests. As noted above, capital requirements are already based on a through-the-cycle approach. Furthermore, stress tests carried out by the Reserve Bank – for example its risk-weight

outcome for the housing sector – have been tougher than the international norm, as set out for instance in the joint International Monetary Fund/World Bank Financial Stability Assessment Program (International Monetary Fund, 2004). This does not suggest room for complacency, however. International norms will no doubt be refined and New-Zealand practices should evolve along with them. To monitor their regulatory capital requirements, New Zealand banks may, if accredited, use the internal-model approach, and several of them have been approved to do so. All of them are expected to apply for and eventually use it. As institutions develop these and other risk-management models, the Reserve Bank should continue to take a proactive approach to help them take into account the collective impact of their individual choices. For instance, by continuing to run co-ordinated macroeconomic stress-test scenarios, it can observe the details of risk-management systems at individual institutions, identify possible feedbacks that are missing in these systems and draw out the implications for bank capital.

The introduction, sometimes rushed, of temporary support programmes has created a need, common to many OECD countries, to design exit strategies. In New Zealand this means thinking about whether, when and how to retreat from wholesale and retail deposit guarantees. When governments guarantee assets or liabilities, they distort competition among companies within and between countries, and financial-market distortions emerge. There is also a danger of a swing to the other side: with government support the private-sector cost of capital may become too low if investors believe recent actions demonstrate that support for capital, assets and deposit liabilities will always be there. The government's willingness to pull out of these interventions is strong, because of the moral hazard they engender, but normalisation will be difficult for New Zealand and will depend on how and when other countries decide to retreat, especially Australia. The wholesale deposit guarantee should be retired as soon as feasible when financial market conditions normalise. But the retail deposit guarantee may be trickier to retire because most other countries, which already had deposit insurance before the crisis, can be expected to keep theirs. Instead of eliminating it, one option would be to convert it into an insurance scheme with risk-based insurance premiums that cover the full actuarial costs of insurance (see Chapter 2).

The financial crisis has reminded market participants and regulators alike of the extent to which financial markets are globally integrated, and of the importance of co-ordination among countries in resolving crises. In New Zealand all major banks are wholly owned, locally incorporated subsidiaries of Australian banks, so banking sectors on each side of the Tasman are very much integrated. The Reserve Bank recognises the principles underlying the Basel accords that the home country should supervise on a consolidated basis and the host country is responsible for supervision of the operations in the host country. Accordingly, the Reserve Bank works with the Australian Prudential Regulation Authority (APRA) to improve regulatory co-ordination under this home-host model. A number of complex questions around how supervisory and intervention authority would be shared between the two countries would need to be resolved if a major New Zealand bank were to become insolvent or substantially weakened. Amendments were introduced to the Reserve Bank of New Zealand Act in 2006 to facilitate the co-ordination of home- and host-country banking supervision between the two nations, particularly in a crisis situation, and the trans-Tasman banking council is currently working on improving guidelines for crisis management. These guidelines should include

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clear, consistent and co-ordinated bank-rescue policies between the two countries, as well as a credible option of allowing banks to fail to limit moral hazard.

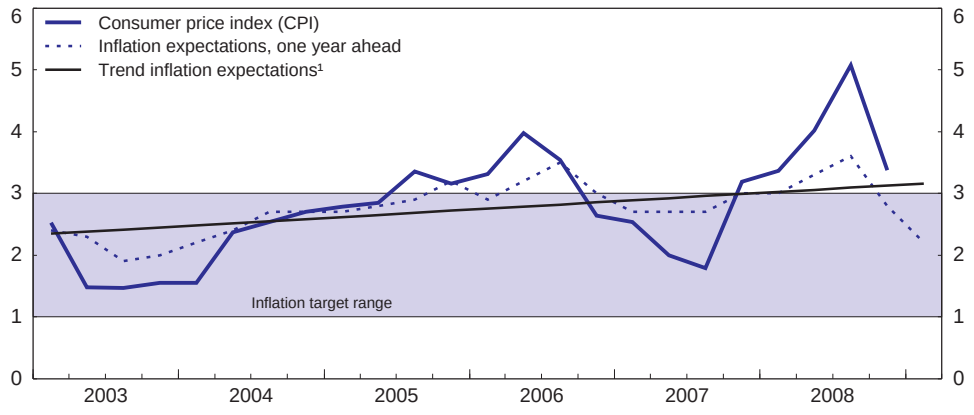
The financial crisis has also pointed to the need for better supervision and regulation of non-bank financial market players. As stated previously, New Zealand has seen the failure of many small finance companies, some of which accepted deposits. In addition to its traditional role in banking supervision, in September 2008, it was decided that the Reserve Bank should assume new regulatory and supervisory functions for all non-bank deposit-taking institutions. Thinking about re-regulating this sector had been ongoing for a few years. The new framework includes capital adequacy ratios, liquidity requirements, restrictions on related-party lending and governance requirements. Non-bank deposit takers will have to be licensed by the Reserve Bank, will need to have a risk-management programme in place and will be required to disclose more information to investors. For instance, registered deposit takers will be required to publish six-monthly "key information summaries" that contain financial and prudential information to assist prospective investors in making informed decisions. They will also be required to obtain and disclose a credit rating from an approved rating agency (unless their total assets are below a certain threshold, in which case they must publicly disclose their exemption).

Monetary policy

Besides aggravating external imbalances, the prolonged housing cycle placed additional pressure on inflation, as rising household wealth stimulated domestic demand. In addition, rising terms of trade and a historically elevated exchange rate placed considerable pressure on sectors of the economy that are heavily exposed to international competition. The Reserve Bank found itself in a difficult position. Restraining inflation required high OCRs, up to 8.25% at the peak, and even at these high cash rates inflation was tracking above or in the upper reaches of the target band and inflation expectations were rising (Figure 1.8). But increasing interest rates encouraged further capital inflows, adding to upward pressures on the currency and risking further damage to the tradables sector. When the financial crisis started, the Reserve Bank had more room to cut rates than other OECD central banks. After progressively taking the OCR down from 8.25% to the

Figure 1.8. **Inflation and one-year-ahead expectations**

Year-on-year percentage change



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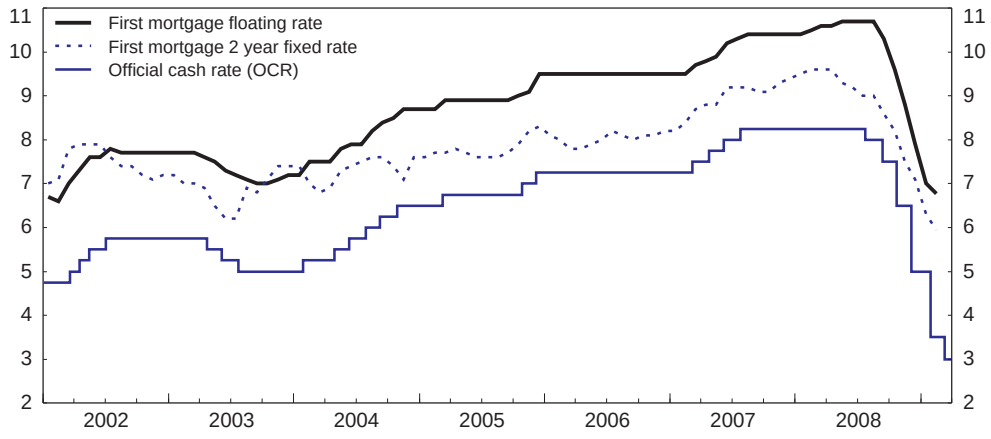
1. Linear regression line through one-year-ahead inflation expectations.

Source: Reserve Bank of New Zealand, *Survey of Expectations Database* and Statistics New Zealand.

current 3%, the carry trade (international uncovered interest-rate arbitrage) has now mostly if not entirely been washed out of the currency, and the monetary stimulus is reinforcing already significant macroeconomic stimulus coming from fiscal policy. Some further stimulus may be required. If so, monetary policy should take priority over fiscal policy, because the OCR is still well above the zero lower bound, and systemic/structural problems in New Zealand's financial system do not seem to be a large impediment to monetary transmission (Figure 1.9). On the other hand, given New Zealand's reliance on overseas savings, a nominal interest rate above zero may be needed to attract the capital necessary to fund the current account deficit. The high debt levels and the New Zealand dollar's lack of reserve-currency status may constitute a significant constraint on the Reserve Bank's ability to provide further liquidity, should it be needed, without destabilising the exchange rate. Moreover, lags in the transmission mechanism make it important for the Reserve Bank to start raising rates once a recovery is clearly underway to anchor inflation expectations around 2% over the next cycle. Historically, an OCR below 5% has stoked capacity tightness and inflation pressures.

Figure 1.9. **Official cash rate and mortgage rates**

Per cent



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Source: Reserve Bank of New Zealand.

Worries around macroeconomic volatility and particularly the impact of the exchange rate on the tradables sector – stemming from a view that limiting inflation relied too much on the OCR – prompted an Inquiry into the Future Monetary Policy Framework by Parliament's Finance and Expenditure Select Committee. This followed an earlier review by the Treasury and the Reserve Bank into possible supplementary stabilisation instruments to assist monetary policy in managing the cycle. The conclusions from the Select Committee were released in September 2008. Their thrust is reasonable: the monetary policy framework is fundamentally sound, and factors other than monetary policy, such as sustained improvements in trend productivity, can play a key role in lessening the pressure on monetary policy to effect the economic adjustments required to maintain inflation in the target range. Because of the perception that the excesses of the recent cycle were rooted in the housing market, the Inquiry considered options that would directly affect the housing market or the market for finance secured on residential property. It pointed out that measures to increase the speed at which new land and houses could to be brought onto the market in response to rising

demand could damp inflation pressures in a future upward housing cycle. Empirical evidence shows that house price cycles are less pronounced in areas where supply is able to respond quickly (Green *et al.*, 1995; Glindro *et al.*, 2008). To this end, the government should consider streamlining regulations and planning laws regarding the provision of housing.

Although the Inquiry came to the conclusion that supplementary stabilisation instruments were not warranted, it invited the government to consider whether existing prudential legislation unduly restricts the Reserve Bank's capacity to respond to inflation with its prudential tools. The worldwide financial crisis has now re-focused policy makers' attention on these issues and on the Bank for International Settlements Basel II agreement. As argued above, bank capital requirements should be better linked to cyclical risk. Though the main aim of such measures would be to ensure that banks have sufficient capital to cope with downturns, any damping effect on lending would reduce inflation pressures as well. Finally, the Inquiry supported a recommendation made in previous *OECD Surveys* on ensuring a neutral tax system with regard to all forms of capital investment (OECD, 2007). Without being the only source of the recent housing market cycle, some features of the tax system, such as the non-taxation of capital gains on housing, may have accentuated the housing boom, with any incentive effect accentuated by the high top marginal tax rate (39% at the time). The desirability of this and other features of the tax system should be re-examined (see Chapter 2).

Fiscal policy in the crisis and beyond

With a low level of gross public debt and a positive net asset position, New Zealand has enjoyed significant fiscal policy flexibility in recent years. However, the impact of the recession on nominal GDP and a lower post-recession GDP path imply a permanent negative revenue shock. Government spending will need to adjust in line with declining revenue or else enduring fiscal deficits and steadily increasing public debt will result. While the projected debt path (some 40% of GDP by 2013 and 80% by 2023 in Treasury's latest downside scenario) is not unduly high compared to some other OECD countries, it has to be seen in the context of New Zealand's high overall external indebtedness and heightened global risk aversion. With massive new issues of sovereign debt hitting the markets simultaneously as governments almost everywhere expand deficits, the NZ government could find itself well down the funding queue if the sound fiscal position underpinning New Zealand's strong credit rating were to be impaired. Hence, fiscal expansion is probably already at the limits of prudence, and should go further only *in extremis*, *i.e.* in the case where monetary policy becomes ineffective and the economy still requires further support. The challenge for the May budget is therefore to embark on a credible consolidation path, with measures aimed at restoring fiscal sustainability over the medium run.

Fiscal consolidation will need to be accompanied by structural reforms to assist private-sector adjustment toward export-led growth and higher net saving, thereby not only counterbalancing the build-up of public debt but going further to channel those savings into investment. The government is calling for lower and better targeted public spending, while focusing the stimulus on tax cuts and accelerated infrastructure building, thereby trying to address both cyclical and some structural needs at once. However, longer-term fiscal challenges have been amplified by the crisis, which implies a much weaker fiscal starting point for dealing with ageing and other future pressures on spending. If efforts to regain the former debt path fail, then the need for structural adjustments to pensions, health care and other spending – already considered difficult – will be that much greater.

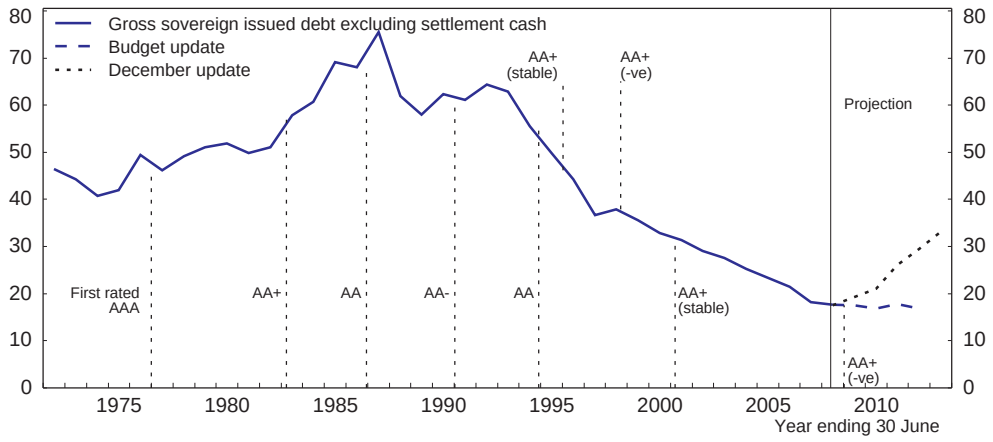
Sharply deteriorating fiscal balances following a golden age of surpluses

Fiscal policy leading into the crisis

The surplus era (1994-2008) was the result of structural reforms that raised growth, together with fiscal consolidation and improvements to the fiscal framework undertaken by successive governments of both major political persuasions during the 1980s and 1990s. The surpluses were used to pay down debt and then to build up assets in the NZ Superannuation Fund, involving an annual average contribution of 1.2% of GDP since the fund was created in 2003. Short-term interest rates, which had peaked at over 20% in the mid-1980s, fell to around 6% by the early 2000s. The combination of primary surpluses and interest rates falling below the nominal rate of GDP growth gave rise to favourable debt dynamics. By 2006, a positive net asset position (including NZ Super) had emerged and gross debt had fallen by 40 percentage points of GDP since the early 1990s (Figure 1.10). Local government debt increased somewhat (as far as can be estimated), however, so that *general* government debt declined by only around 30 percentage points of GDP. Nevertheless, the result of this exemplary performance, assisted by then-surging asset valuations in NZ Super, was a positive net asset position as from 2005, and negative net interest payments at the general government level as from 2003, reinforcing the virtuous budget cycle.

Figure 1.10. **Central government gross debt and country rating**

Per cent of GDP



StatLink http://dx.doi.org/10.1787/562514608016

Source: Treasury, *Economic and Fiscal Forecasts December 2008* and Fiscal time series.

The size of government, as measured by cyclically adjusted spending and tax ratios, continued to shrink until 2001. However, the cyclically adjusted tax ratio rose from 40% in 2001 to 45% by 2006, back to where it had been in the early 1990s (Table 1.4). Part of this "structural" tax increase was indeed the result of deliberate policy, notably a 2001 rise in the top marginal personal income tax, from 33 to 39%, which kicked in at NZD 60 000 (making it the relevant marginal rate for 5% of all taxpayers in 2001, but 13% more recently). But a significant part also stemmed from record terms-of-trade gains which boosted corporate and farm incomes over and above the normal output gap effects, though other temporary factors such as asset price bubbles contributed.[5] Table 1.4 shows that terms-of-trade-related tax revenues during 2001-08 were more than double those attributable to the favourable domestic economic cycle. Booming taxes, together with declining interest payments

Table 1.4. **Fiscal indicators**

As per cent of potential GDP, national accounts basis

	Fiscal variables						Estimated transitory changes in taxes/spending	
	Cyclically adjusted primary spending[1]	Cyclically adjusted taxes[1]	Net interest payments (% of GDP)	Unadjusted balance (% of GDP)	Cyclically adjusted balance[1]	Underlying primary balance[2]	Output gap component	Terms of trade component[3]
1990	41.3	47.5	4.1	–4.5	–4.0	–0.2	–0.5	0.3
1991	40.5	45.4	2.8	–3.4	–1.6	1.4	–1.9	–0.2
1992	40.0	45.0	2.9	–3.0	–0.7	2.3	–2.3	–0.3
1993	38.5	44.5	2.3	–0.3	0.9	3.0	–1.2	0.1
1994	37.4	45.7	1.2	2.9	3.0	4.0	–0.1	0.2
1995	37.2	44.7	1.4	2.8	2.4	3.4	0.4	0.4
1996	36.7	43.7	0.7	2.8	2.2	2.4	0.6	0.5
1997	37.4	42.9	0.9	1.4	1.3	1.9	0.2	0.3
1998	36.4	41.4	0.7	0.4	1.2	1.7	–0.9	0.2
1999	36.9	40.8	0.2	0.0	0.4	0.5	–0.4	0.1
2000	35.6	40.8	0.4	1.9	2.0	2.4	0.0	0.0
2001	34.8	40.1	0	1.8	2.0	1.4	–0.2	0.6
2002	34.4	41.2	0	3.8	3.5	3.1	0.2	0.4
2003	34.9	42.1	–0.1	4.0	3.6	2.7	0.4	0.9
2004	34.8	41.8	–0.4	4.1	3.3	1.6	0.8	1.3
2005	35.8	43.8	–0.6	5.2	4.4	2.4	0.8	1.3
2006	36.6	45.5	–1.7	5.9	5.5	2.7	0.5	1.1
2007	37.1	44.8	–1.0	5.0	4.3	1.6	0.7	1.7
2008[4]	37.1	43.2	–1.2	2.7	2.9	–0.3	–0.2	2.1
2009[4]	37.3	41.0	–0.9	–2.1	0.5	–2.3	–2.6	2.0
2010[4]	37.5	39.3	–0.5	–4.9	–1.4	–4.2	–3.5	2.4

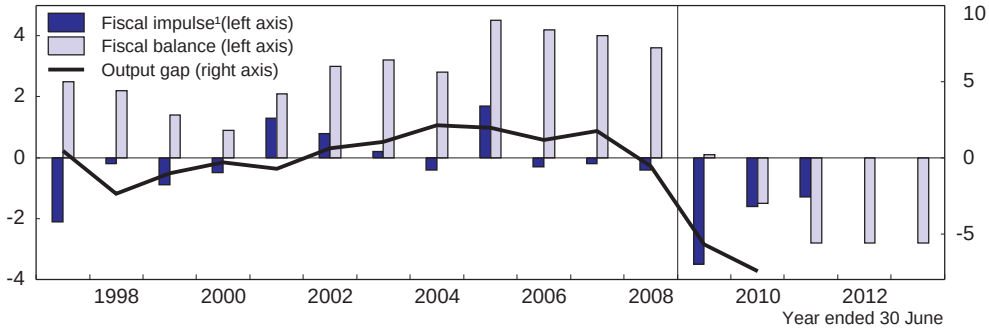
1. Adjusted for output gap component.
2. Balance excluding net interest payments, adjusted for both cyclical and terms-of-trade components.
3. Based on methodology in Turner (2006) which applies tax elasticities to deviations of terms of trade from trend, the latter calculated as 1970-2007 average.
4. Projections.

permitted nearly as large an increase in adjusted primary spending (the remainder going to net debt reduction). Higher taxes and a reallocation away from defence and core services funded spending increases in social programmes (*e.g.* Working for Families), education and health care (see Chapter 3). Structural surpluses rose for a time, though after 2006 these surpluses began to recede, even as the economy remained overheated (Figure 1.11).

The May 2008 budget (for the fiscal year 2008-09) was highly expansionary. Given that gross debt was projected to fall below the 20% of GDP considered prudent by the government, targeting structural balance (after allowance for prefunding) was considered appropriate. Over the budget's multi-year horizon, the cumulative fiscal stimulus provided was nearly 4% of GDP. With the economy turning out to have already been in recession, that stimulus has proved fortuitous *ex post*. The budget included personal income tax cuts and some spending increases, all together imparting a major boost to demand over the second half of 2008 and in 2009. The "operating allowance" for the years 2009-12, *i.e.* the annual amount allocated to new operating spending, was kept to NZD 1.75 billion, which implied a rate of growth below that of preceding years as budget room was now smaller. A pre-election budget update in late October 2008 added another 1½ percentage points of GDP to the medium-term fiscal deterioration. This mainly reflected the higher-than-

Figure 1.11. **Fiscal balance and fiscal impulse**

Per cent of GDP



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1. This indicator has been developed by the NZ Treasury as a guide to the impact of fiscal policy on demand in the economy. It is constructed as i) a cash-based operating (current) balance adjusted for: cyclical components of taxes and unemployment spending, interest payments and subsidies to the KiwiSaver scheme (as these are not deemed to affect domestic demand); less ii) capital expenditure adjusted for that part of defence spending deemed not to be related to domestic demand.

Source: Treasury, *Economic and Fiscal Forecasts December 2008* and OECD.

expected costs of earlier spending programmes (greater take-up of Kiwisaver subsidies, 20 hours weekly free child care and settlement of treaty claims). After the 8 November election (which was won by the main opposition party), the budget outlook was again updated to reflect the fast deteriorating economic situation and to take into account personal income tax cuts and accelerated infrastructure spending announced in the new government's stimulus plan. Even though the budgetary cost of the new tax cuts was in large part compensated by a reduction in Kiwisaver subsidies and elimination of the new R&D tax credit, the worsening recession implied a sharp shift in the operating balance from a 3% surplus in 2008 to an officially estimated 3% deficit by 2011 (Table 1.5). The programmed 2009-11 stimulus rose to 7% of GDP (Figure 1.11).[6]

In conclusion, fiscal policy prior to the crisis demonstrated the benefits of a sound fiscal framework, achieving debt reduction and prioritisation of spending, but one that faced inevitable challenges in differentiating permanent from temporary components of

Table 1.5. **Evolution of the central government budget**

(June years; per cent of GDP)

	Operating balance excluding gains and losses (OBEGAL)			Cyclically adjusted OBEGAL		
	BEFU[1]	PREFU[2]	HYEFU[3]	BEFU[1]	PREFU[2]	HYEFU[3]
2007	3.7	3.7	3.7	3.7	3.5	3.5
2008	2.9	3.1	3.1	2.9	2.8	2.6
2009	0.7	0.0	–0.1	1.1	0.6	0.3
2010	0.5	–0.9	–2.3	0.7	–0.3	–1.5
2011	0.3	–1.2	–3.1	0.2	–1.0	–2.7
2012	0.1	–1.4	–3.1	–0.1	–1.6	–3.1
2013	–	–1.5	–3.0	–	–1.7	–3.2
Change 2007-13 (in percentage points)	–3.7	–5.2	–6.7	–3.7	–5.2	–6.7

1. Budget 2008 Economic and Fiscal Update, 22 May 2008.
2. Pre-election Economic and Fiscal Update, 6 October 2008.
3. Half-Year Economic and Fiscal Update, 18 December 2008.

Source: Treasury.

revenue gains. The profound structural reform and fiscal consolidation programmes of the 1980s and 1990s supported a dramatic reduction in New Zealand's risk premium, which is important to safeguard. Cyclical conditions during the 2000s would have called for a restrictive policy stance with continued strong surpluses.[7] Only once debt fell to a low level and projections presaged ongoing declines did a zero structural balance (after allowance for pension prefunding) become an appropriate objective. However, current projections suggest the move into deficit has a significant structural component; and projections of a permanently lower GDP path call for lower spending.

Crisis measures and financial repercussions

New Zealand's fiscal stimulus is among the highest in the OECD, whereas the recession's projected trough is only slightly shallower than the OECD average (OECD, 2009). An important question is whether this stimulus will be effective. New Zealand's fiscal multipliers appear to be smaller than those estimated for the larger economies, reflecting greater leakages or crowding out in a small open economy (Barker *et al.*, 2008). There are reasons to believe that the multipliers might have changed. *First*, the sharp fall in the exchange rate reduces leakage into imports. *Second*, investment crowding out is not likely to be an issue so long as business confidence and access to credit are moribund, though lack of credit might weaken the multipliers. *Third*, liquidity constraints among struggling households put a brake on normal Ricardian behaviour (*i.e.* households saving more in anticipation of the need to pay higher taxes in the future),[8] although, as seen above, desired deleveraging means that the marginal propensity to save will be high. Thus, the overall direction of change is ambiguous.

The composition of the stimulus also matters, spending impulses tending to have a stronger impact than tax cuts. The present stimulus package contains a balanced mix of both (Table 1.6). Accelerated infrastructure spending – if projects with a sufficiently positive cost-benefit ratio can be rolled out quickly enough – should stimulate demand and create employment (and generate positive supply-side effects). Improvements in approval processes through general regulatory reform (such as the rewriting of the Resources Management Act; see Chapter 2) would speed up project implementation. Projects with longer implementation lags may help absorb the spare capacity that is projected to persist for several years. However, excessive haste should not be allowed to impede rigorous cost-benefit analysis and fully transparent procurement and costing procedures.[9] The extra assistance being given to displaced workers is well targeted and clearly reversible, and could be boosted if further stimulus is needed. On the tax side, cuts to the top marginal rate are supply-side friendly, but if one was solely focused on boosting demand, temporary personal income tax reductions for low-income workers would better serve the objective. The new tax credit to single workers earning up to 80% of the median wage falls into this category, and re-establishes fairness *vis-à-vis* families, though it is permanent and could adversely affect beneficiaries' future labour supply because it increases marginal effective tax rates (METRs), as does Working for Families.

But this stimulus also inflates a deficit that is already rising in response to the sharp cyclical slowdown, forcing the authorities to increase local-currency bond issuance. Around two-thirds of the public debt stock (worth some USD 18 billion) is held by foreign residents, albeit denominated in domestic currency (Figure 1.12). The very nature of this crisis, though, makes such credit hard to get, since risks are being reassessed and risk appetites will probably undershoot before stabilising. By the end of the budget's medium-

Table 1.6. **NZ fiscal stimulus measures**

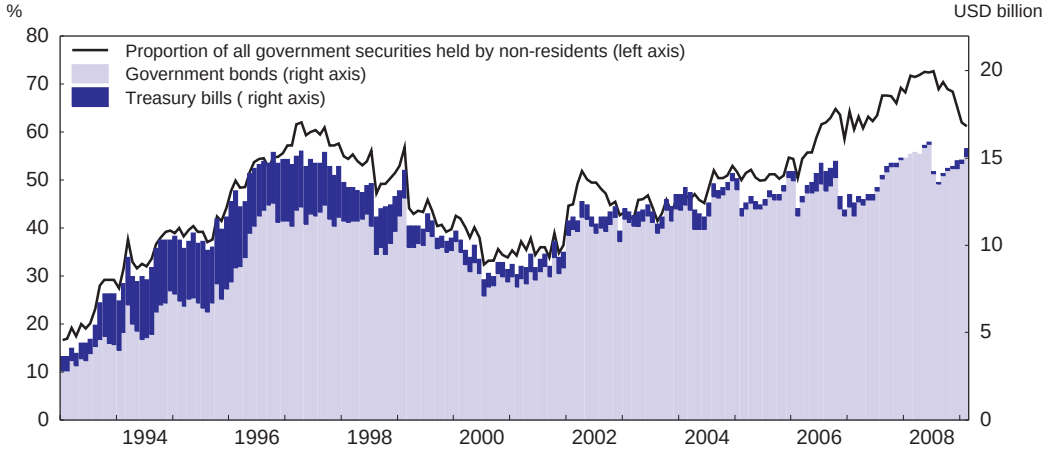
Annual fiscal costs

	Announced date 2008/09	2009	2010	2011	2012	2013
		NZD millions, June years				
Spending measures						
Accel. public investments	Dec. 18 and Feb. 12	108	775	337	233	0
Reduced KiwiSaver subsidies[1]	Dec. 18	–92	–664	–792	–870	–903
Unemployment benefits	Dec. 18	25	25	0	0	0
Tax measures						
Personal income tax cuts						
Low income groups	May 22	1 633	2 440	3 351	4 152	0
High income groups	Dec. 18	211	818	702	616	0
New independent earner tax credit	Dec. 18	44	239	356	364	0
Small business tax relief	Feb. 02	60	422	–214	0	0
Eliminated R&D tax credit[1]	Dec. 18	–36	–162	–193	–221	–249
Total		**1 953**	**3 893**	**3 547**	**4 274**	**–1 152**
Memorandum item: Fiscal impacts						
(as a percentage of GDP)						
Fiscal package impact[2]		–1.2	–1.6	0.2	–0.3	2.9
Total fiscal impulse[3]		–3.5	–1.6	–1.3	0	0
Residual[4]		–2.3	0	–1.5	0.3	–2.9

1. Financing measure.
2. Excluding financing measures, *i.e.* KiwiSaver subsidies, which are assumed not to affect demand, and R&D subsidies that were never actually implemented (only budgeted).
3. As calculated by the NZ government (see Figure 1.11).
4. Reflects ongoing impacts of past spending and tax measures and non-policy related structural shifts in expenditures and receipts.

Source: Treasury.

Figure 1.12. **Non-resident holdings of New Zealand government securities**



StatLink http://dx.doi.org/10.1787/562570283347

Source: Reserve Bank of New Zealand.

term horizon in 2013, gross debt in the main forecast scenario will have doubled to 33% of GDP (39% in the downside scenario). Although still quite modest by OECD standards, the government considers this level of debt to be "imprudent" (English, 2008). Indeed, some rating agencies have stated that without a credible medium-term fiscal plan and some easing of external imbalances, New Zealand risks a downgrade (see above). Mounting debt

and a deterioration in New Zealand's credit rating would result in higher debt-servicing costs, worsened debt dynamics and the need for a larger fiscal adjustment later on. A downgrade could also critically weaken the impact of the stimulus itself by undermining private-sector confidence, ability to plan and credit availability.

New Zealand's fiscal funding vulnerability, despite relatively low debt, stems from several factors, all of which are being exacerbated by the ongoing crisis:

- *First*, excessive total economy indebtedness abroad raises the sovereign risk premium which must be paid by government even if it itself may be in healthy shape.[10] Conversely, the quality of the bank wholesale guarantees depends crucially on the creditworthiness of government. Though households will be winding down their debt levels *via* both conventional Ricardian effects and the adjustment process outlined above, external indebtedness will likely keep rising for a while, especially as current-account deficits well above the debt-stabilising level of around 4% of GDP (see above) are expected by forecasters to persist for some years to come. If, in addition, global risk aversion were to rise further, then the NZ country-risk premium could rise.
- *Second*, taking into account total long-run unfunded fiscal liabilities, New Zealand already exhibited less of a fiscal advantage prior to the crisis than fiscal indicators suggested: the long-run increase in pension and health spending associated with population ageing is projected to exceed the respective OECD averages (Table 1.7), to which must be added the worsened medium-term fiscal starting point as well as a recently-identified additional funding requirement for the Accident Compensation Corporation (ACC).[11] Contingent liabilities from the new financial-sector guarantees have also worsened the long-run outlook, though no more so than in other OECD countries.
- *Third*, both evolving data and consensus forecasts suggest that the macroeconomic assumptions underlying the main budget forecast are optimistic. In the latest budget update, the previous budget's downside economic scenario had become the new main scenario, and a repeat of this pattern now seems likely,[12] in which case the automatic stabilisers and potential need for further stimulus would imply a higher deficit and debt build-up than now projected.

The government's latest budget update has calculated that in the absence of policy changes, structural deficits of around 3% of GDP (4% in the downside scenario) would emerge toward the end of the budget horizon and deficits would persist over a prolonged period. This implies that by 2023, public debt would reach nearly 60% of GDP (80% in the downside scenario), compared with less than 20% in the pre-crisis (May 2008) baseline and some 30% in the pre-election (October 2008) baseline. A key factor driving this result is a permanently lower *level* of nominal GDP compared with forecasts made before the crisis – due to lower real GDP and inflation over at least the next few years – implying lower tax revenues. But even when real GDP has fully recovered (and reaches the point at which the output gap closes), the tax baseline stays on a permanently lower trajectory as a result of both recession-induced disinflation and wealth destruction. Since the Reserve Bank targets inflation and not the price level, the previous path for the GDP deflator is by assumption never regained; by contrast, primary non-cyclical expenditures are assumed to be pre-set over the budget horizon in nominal terms (apart from certain social benefits indexed to prices), and it is from this unchanged base that the 10-year spending projections grow, *de facto* adversely affecting the balance. More serious, however, are real tax losses induced

Table 1.7. **Long-term projections for public spending in key areas**

Changes expressed in per cent of GDP (2005-50)

	Old-age pension	Health and long-term care			Total age related
		Pure demographic effect	Total increase[1]		
			Cost-pressure scenario	Cost-containment scenario	
Korea	8.0	5.4	8.6	5.8	13.4
Greece	10.3	1.4	6.6	3.9	11.7
Portugal	9.3	2.1	6.2	3.5	11.4
Czech Republic	6.8	2.5	5.8	3.3	9.3
Luxembourg	7.4	1.5	6.9	3.8	8.9
Norway	8.0	0.9	5.1	2.5	8.9
Spain	7.0	1.8	6.5	4.0	8.8
Ireland	6.5	1.8	7.8	4.6	8.3
New Zealand	**5.7**	**2.5**	**6.2**	**3.6**	**8.2**
Belgium	5.1	1.0	5.2	2.6	6.1
Average	**4.2**	**1.9**	**6.1**	**3.4**	**6.1**
Finland	3.3	1.8	6.0	3.1	5.1
Netherlands	3.8	1.3	5.7	3.1	5.1
Switzerland	3.6	0.8	4.9	2.3	4.4
Denmark	3.2	1.0	5.0	2.4	4.2
Australia	1.7	2.3	6.1	3.4	4.0
Austria	2.2	1.8	5.8	3.1	4.0
Slovak Republic	–	3.7	6.9	4.0	3.7
France	2.1	1.5	5.3	2.7	3.6
Canada	1.7	1.9	6.2	3.5	3.6
Germany	2.0	1.3	5.5	3.0	3.3
Japan	0.6	2.6	6.5	4.0	3.2
Mexico	–	3.2	8.6	5.6	3.2
United Kingdom	1.7	1.3	5.5	2.8	3.0
United States	1.8	1.1	5.2	2.5	2.9
Hungary	1.2	1.7	5.6	2.5	2.9
Turkey	–	2.6	5.7	2.9	2.6
Italy	–0.4	1.8	6.6	4.1	2.2
Iceland	–	1.4	5.6	2.7	1.4
Sweden	0.8	0.3	4.3	1.5	1.1
Poland	–2.5	3.0	7.3	3.6	0.5

1. The "cost-pressure" scenario assumes that, for given demography, expenditures grow 1% per annum faster than income. This corresponds to observed trends over the past two decades. The "cost-containment" scenario assumes that some (unspecified) policy action is taken to curb this "extra" expenditure growth such that it is eliminated by the end of the projection period (2050).

Source: Price, R., I. Joumard, C. André and M. Minegishi (2008), "Strategies for countries with favourable fiscal positions", *OECD Economics Department Working Papers*, No. 655, OECD, Paris.

by terms-of-trade and asset-price declines, and possibly long-lasting reductions in potential output. Expenditure further contributes to the projected deterioration through increased finance costs deriving from higher debt levels. Lower nominal GDP growth also increases the debt-to-GDP ratio for any given level of debt.

Medium-term fiscal strategy to maintain credibility

Budget policy

Fiscal policy needs to perform a delicate balancing act. It must avoid turning overly restrictive so long as the output gap remains deep in negative territory; to do otherwise

could be self-defeating. On the other hand, it must avoid deficits becoming so entrenched that markets lose faith and either or both the government and the banks find it materially more difficult, or more costly, to issue debt. It is important that a credible multi-year fiscal consolidation programme be presented with the May 2009 budget in order to secure continuing satisfactory access to credit in a highly risk-averse market. In turbulent times, markets may look askance at smaller countries in any event, preferring US Treasuries and other large countries' debt as more secure and liquid investment vehicles. The government promised to take steps to prevent realisation of the projected debt path shown in its December 2008 budget update, with a focus on reducing over-staffing and re-examining the entirety of public spending for its effectiveness and necessity. As an initial move, the Minister has pledged to: identify true fiscal risks; drop unfunded commitments of the previous government; limit the 2009 budget process to the immediate priorities of the new government; and cap the number of people employed in back office administration (English, 2008). Details of the future path to consolidation are not expected before the budget.

Fiscal policy should do all it can to set the appropriate context for a resumption of growth and current-account adjustment, New Zealand's real Achilles heel. It may be questioned whether fiscal settings – *i.e.* not only the level of debt, but also the level and nature of spending and taxes – has up until now always been ideal from a growth perspective. According to at least one estimate, the size of government is negatively associated with economic growth in New Zealand (Grimes, 2003). Hence, the best use of surpluses, or equivalently budget room made possible by spending cuts, may be to cut taxes, which exert a significant drag (deadweight loss) on growth, in particular corporate and personal income taxes (Price *et al.*, 2008). An analysis of effective tax rates for New Zealand suggests that the disincentive effects facing households in making their labour-supply decisions are relatively high, in particular due to abatement of the Working for Families package over a wide income range. A flatter tax rate structure accompanied by more targeted welfare measures could improve work incentives (Creedy *et al.*, 2008).[13] The 2001 hike in the top marginal personal income tax rate may have been especially distortive to saving-investment decisions. In combination with the lack of capital gains taxation, it may have contributed to the size of the housing bubble and the eventual economic downturn by raising the relative post-tax return to housing investments.

Careful analysis is therefore needed in order to establish that the marginal benefit of new spending justifies the extra deadweight cost of the resulting taxation. Well designed infrastructure spending is likely to yield high returns, the more so as it was cut sharply during the initial consolidation and never fully restored.[14] Social spending is less certain: if it enhances market security and builds human capital, it too will enhance growth potential, but if it reduces the need to save or the incentive to work, then it would go the other way. The policy orientation signalled by the new government, namely reducing government to a more efficient size, appears well adapted to an era of tighter budget constraints and lower potential growth. Focusing new spending on infrastructure and tax cuts on reductions in the top personal income tax rate could be productivity-enhancing.

Balance-sheet management

The global crisis has imparted a substantial shock to the NZ Super Fund. By 31 January 2009 crisis-induced losses had wiped out some one-quarter of the fund's value, reducing average annual returns since the fund's inception in 2003 to 3.3%, or 3.6% *less* than

the risk-free rate. Given the sustained period of deficits ahead and ongoing contributions to the Super Fund (which would need to be boosted in line with lower expected returns),[15] the government will effectively be borrowing to invest in financial assets. In such a context, it should undertake a more fundamental examination of its prefunding strategy. It has a couple of options. *First*, pension reform could partially reduce the expenditure burden associated with an ageing population by reducing the size and need for Super Fund contributions. *Second*, the government could suspend contributions as long as deficits persist, or at least until global credit conditions improve. Prior to the elections, the incoming government had proposed that a part (perhaps 40%) of NZ Super be set aside to help fund infrastructure investments. While such reactions are understandable, the governance arrangements that protect the statutory independence of the fund's governing board should be safeguarded. The Fund is subject to commercial objectives aimed at maximising returns. Introducing non-commercial objectives will only weaken the effectiveness of this strategy by lowering returns. The government should instead focus on stemming the losses from public shareholdings in ACC, Air New Zealand and KiwiRail (Chapter 2), and scrutinising to what extent apparently profitable entities like KiwiBank may owe their success to implicit public guarantees, or may distort sector competition.

The budget framework

The budget framework is rather sophisticated, modern and successful in many respects, notably regarding debt control. Such control is optimised within the context of a forward-looking budget process, wherein the government "ties its hands" by fixing operating and capital "allowances", *i.e.* annual nominal new spending commitments, several years in advance normally covering the full parliamentary term. The framework may have been less successful in holding spending growth in check in the face of buoyant revenues, rather than allowing pro-cyclical growth of public spending, however.[16] For example, there was little to stop recurrent positive revenue surprises in recent years, notably arising from terms-of-trade gains, from being spent by the end of each budget year, as the focus was on the target for the operating balance (and equivalently, debt), while the operating allowance applies to *net* spending, defined as spending less revenues and cyclical effects.[17] For a commodity exporter like New Zealand, the method of structurally adjusting the fiscal accounts might be considerably improved by making an adjustment for the commodity price cycle, over and above that for the domestic cycle as conventionally made (see Table 1.4 and Turner, 2006). Using this type of adjustment for purposes of applying the budget rule would be akin to saving and withdrawing fluctuating commodity revenues in an asset stabilisation fund of some sort. In addition to the challenges of determining trends in the terms of trade and their effects on revenues, issues around institutional design, such as who makes the adjustment and how stabilisation funds are managed, are relevant as well.

Moreover, while the practice of fixing the operating allowance (and spending baselines) in nominal terms is a useful tool for exerting spending discipline during inflationary times, in present recessionary circumstances it appears to impart an upward deficit and debt bias to the projections. Unanticipated disinflation since the NZD 1.75 billion operating allowance for budgets 2009-12 was initially set (in May 2008) has raised its real value, as indeed that of the entire spending baseline (some NZD 32 billion in 2008). It also may be queried why the allowance was not adjusted downwards when the new inflation forecast was made: upward adjustments during the evolving budget year have occurred in the past.[18] By the end of the medium-term horizon in 2013, and beyond,

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the level of real spending will be around 1% higher than originally intended, that being the extent of the downward shift in the GDP deflator. This may be considered a sort of automatic stabiliser, but one which will never be offset in the upturn, since as noted the price level will not revert to the earlier assumed path. Hence, the spending ratio remains permanently higher than it would have otherwise been.

There may be an argument for adopting a spending rule to supplement the fiscal transparency principles and current medium-term fiscal objectives which provide the main fiscal anchor. A number of OECD countries have instituted expenditure rules, with good results (Box 1.1), and New Zealand employed a form of expenditure rule in the 1990s and early 2000s. A party in the new governing coalition is pushing for a rule that caps nominal spending growth to population growth plus inflation, *i.e.* a real per capita spending cap, which might perhaps be made more flexible depending on consolidation needs and the particular design of the rule that may work best for New Zealand, for example excluding cyclically-sensitive items such as unemployment benefits from the cap. In severe downturns as at present, moreover, the rule would have to be temporarily suspended to allow for the needed discretionary action. A major advantage of a spending rule is that it separates spending levels from unforeseen revenue volatility while allowing full use of the automatic stabilisers, making resources more predictable and budgets more symmetric over the cycle. Critically evaluating all baseline spending, as the government intends, would be a good prelude to a spending rule. Such a review would be considerably

Box 1.1. **Fiscal spending rules – a good idea?**

New Zealand, like Australia and the United Kingdom, follows a principles-based approach to budget management allowing for greater flexibility than rules. The NZ budget is anchored by the twin principles of transparency and fiscal responsibility enshrined in law. The first principle requires full and accurate communication of the budget's long-term situation as a means of disciplining policy-makers *via* market reactions; the second stipulates that a "prudent" level of the debt shall be achieved and subsequently maintained. In practice, governments bind themselves to a long-term debt target by means of budget balance defined to apply on average and to the current operating balance, allowing deficits when growth is below trend, and conversely for surpluses; borrowing is permitted to fund capital spending. This approach has been generally successful in both smoothing the economic cycle and maintaining fiscal sustainability (Barker *et al.*, 2008). Nevertheless, the transparency-responsibility approach seems to work well only after substantial budget consolidation has been achieved by other means (OECD, 2002). Hence, principles alone may not suffice in getting the fiscal situation back to equilibrium following the crisis, and may need to be supplemented by rules. Budget-balance rules are most commonly used in the OECD, but have generally not met with great success.

Some countries have replaced or supplemented budget-balance rules with spending rules, with good results:

- The *US spending cap rule* was particularly successful in eliminating federal deficits from 1991 through 2002, even though it was later suspended. It subjected annual appropriations (discretionary spending) to a nominal spending cap, imposing pay-as-you-go restrictions (deficit neutrality) on all mandated spending (entitlements) net of total taxes. The rule was adjusted *ex post* by budget sequesters (across-the-board spending cuts).

Box 1.1. **Fiscal spending rules – a good idea?** *(cont.)*

- *Finland* supplements EMU rules with a rolling four-year real ceiling on central government spending, except for the 25% of spending that is cyclical and EU financed. It allows the government to take action as a brake on excessive deficits, *i.e.* higher than 2¾ per cent of GDP. Finland has never faced an excessive deficit procedure.
- *The Netherlands* replaced its deficit rule by an expenditure rule in 1993, which enabled a successful fiscal turnaround. Real spending caps were established over the term of the government, with strong firewalls between revenue and expenditures: if the budgetary situation turns out more favourable than expected, then some of the extra revenue is used to cut taxes, depending on the size of the remaining deficit.
- Following the early 1990s financial crisis, in 1997 *Sweden* adopted a nominal ceiling on central government primary expenditure, including old-age pensions, on a rolling three-year basis, though with a margin of flexibility. The ceilings have been an effective means of achieving a 1% surplus target and even exceeding it. In good times early in the current decade the margin for flexibility was used up, which was problematic. However, in the last boom these margins were kept sizeable and they are giving room for automatic stabilisers to work freely in the current recession. Tax expenditures have to some extent been used as a back door method of circumventing the rule. However, the government has in recent years largely avoided this practice and tightened the principles for its use.

According to Anderson and Minarek (2006), spending rules appear to outperform deficit rules in virtually every aspect of budget policy: *i*) a spending rule provides firm guidance to policy makers whether the economy and budget are weak or strong, whereas deficit rules may encourage countries to run the maximum deficit permitted, running the risk of creating excessive deficits under adverse conditions (*fiscal responsibility*); *ii*) spending rules allow the automatic stabilisers to work fully and symmetrically over the cycle, whereas deficit-based rules provide no incentive for counter-cyclical policy during upswings and can limit even the operation of automatic stabilisers in the downswing (*macroeconomic stabilisation*); *iii*) violations of a spending rule are transparent and easy to enforce, unlike deficit based rules, which are easier to evade by making optimistic economic assumptions or unlikely plans for future spending and tax discipline and then pleading exemptions *ex post* by blaming the failure of assumptions to materialise (*credibility*); *iv*) a spending rule makes the availability of resources, notably those annually appropriated for the *core functions of government*, more predictable, whereas under a deficit rule, resource availability may flip flop along with cyclical and budgetary developments; *v*) funding for *public investment* can be more easily protected under a spending rule, either by requiring additional fiscal restraint through mandatory spending or taxes, or by setting a separate appropriations limit for investment, but with a deficit rule, a separate golden rule is usually required; *vi*) the greater fiscal predictability encouraged by spending rules can ease *co-ordination with monetary policy*, while also providing for greater confidence and behavioural stability in the private sector.

strengthened if undertaken by an independent agency on an ongoing basis, as would be consistent with past OECD advice (Rae, 2002).

Local government

Local government spending has contributed to the spending push, following earlier reforms which greatly expanded the scope of local authority powers, presumably in line

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with the principle of subsidiarity. Local governments have progressively moved beyond basic local services such as water, rubbish and sewerage into various cultural, social and economic activities. Part of the problem stems from weak democratic accountability at the local level, characterised by low turnout in local elections, undue influence by special interests and opaque funding. Profligate spending has been funded by steadily increasing "rates", a general tax on property values – which has contributed to domestic inflation – while user charges play less of a role than formerly. Differential rating has furthermore imposed disproportional costs on businesses, cross-subsidising households to the detriment of local private investment and development of the local tax base, even though these differentials have been shrinking. Local councils' commercial investments in sectors such as ports get poor returns and distort capital allocation (see Chapter 2).

A local-government spending cap like the one proposed above would help; indeed, it should be legally binding unless overwritten by specific voter approval (Kerr, 2007). But by itself it may be insufficient to achieve the retrenchments needed to reduce tax pressure. Greater accountability and transparency in financing could create better incentives to constrain spending. For example, road tolls should be used, and water should be metered, with a user charge set at marginal cost and not subsumed together with everything else in rates, so as to encourage conservative usage and capacity expansion.

Preparing for the demographic transition

Sharp declines in fertility since the end of the long post-war baby boom and a trend rise in longevity mean that OECD countries, and increasingly developing ones, will face a lasting step increase in the ratio of the elderly to the working-age population once the baby boomers retire. In New Zealand, the number of people over 65 is projected to grow almost three-fold and those over 85 six-fold by 2050, while the working-age population will shrink slightly, implying a sharp rise in the old-age dependency ratio starting around 2020.[19] The adverse impact of ageing on potential growth may be less of a concern in New Zealand than in other OECD countries because of its relatively high rate of net immigration, albeit one that is quite cyclically sensitive. But other demographic changes will have a more direct fiscal impact. An increase in Pacific Island and Maori populations, which tend to have a higher incidence of chronic health conditions, and in Asian immigrants, could further strain the social spending system. Technological advances allowing improvements in health care will probably exacerbate demand pressures much more than demographics. The political and economic scope for increasing the tax ratio, on a stagnant base, to pay for these rising health and pension needs is probably rather limited.

The most recent (2006) official long-run fiscal projections show that costs associated with ageing and especially health care will push the debt ratio from 20% in 2020, when ageing pressures will start to bite, to 100% by 2050 (see Chapter 3). The financial crisis has significantly worsened this picture. The combined effects of ageing and of the crisis could give rise to highly non-linear and patently unsustainable debt dynamics. This underlines the need to unwind the crisis' impacts as much as possible before the onset of population ageing.

Policy action to contain future pensions and health spending should likewise be undertaken fairly rapidly, to allow time for the required behavioural adaptations as well as to reduce the need for prefunding through the Super Fund. As in other OECD countries, controlling health care costs is the most pressing fiscal challenge and it is discussed in depth in Chapter 3 of this *Survey*. The basic universal public pension (currently around two

thirds of the average wage for a couple and one third for an individual) minimises economic distortions insofar as it avoids disincentives to private saving associated with means-tested old-age assistance observed in other OECD countries. However, universal benefits are very expensive. To make significant long-run savings, the universal benefit should be indexed to the CPI rather than wages, a step that has already been taken by many OECD countries. Furthermore, the retirement age should be indexed to rising life expectancy, an "actuarial fairness" feature increasingly recognised as essential to sustainability and justice of public pension systems in other OECD countries.[20] Although the retirement age was raised from 60 to 65 in the 1980s reforms, a further rise to at least 67 (as in the United States) could soon be envisaged and thereafter be aligned with longevity gains.

The last government introduced an opt-in private pension savings scheme (KiwiSaver), including a government subsidy for employer contributions to workers' savings. The intention was not just to top up the basic public pension with a new private pension pillar in order to ensure the sustainability of the public pension system, but also to encourage saving so as to help reduce the current account deficit. Although the take-up of KiwiSaver was considerably higher than expected, saving in the aggregate fell for a variety of reasons already discussed. The new government has recently reduced the subsidy in order to help pay for its tax cuts. It might consider other ways to bolster saving incentives, notably by removing inter-temporal distortions in the tax system by greater reliance on consumption-based taxation, including property tax at the local level. The government also significantly influences private saving behaviour through public service provision and income transfers (Ramakrishnan, 2003). Enhancing private cost sharing for health-care services (Chapter 2) and further reforming public pensions as suggested could help to motivate higher saving.

Box 1.2. **Recommendations for macroeconomic policies**

Monetary policy and financial regulation

In the short term, monitor closely the impact of the evolution of the financial crisis on the domestic economy:

- Give precedence to monetary policy over fiscal policy in responding to any further deterioration in economic conditions as long as the former remains effective and does not put orderly exchange-rate adjustment at risk. Do not use further fiscal stimulus other than as a last resort, in which case measures should be temporary to allow fiscal consolidation over the medium term.
- Given normal lags in monetary policy transmission, normalise monetary policy settings relatively rapidly once recovery is securely underway.

And in the longer term:

- Anchor inflation expectations around the middle of the target inflation band (currently 1-3%).
- Exit from the government wholesale bank-funding guarantee once financial market conditions normalise, and convert the retail-deposit guarantee into a self-financing, risk-based insurance scheme.

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Box 1.2. **Recommendations for macroeconomic policies** *(cont.)*

Fiscal policy

Present a credible 2009 budget, aimed at attaining structural balance as soon as possible, to avoid a ratings downgrade:

- Undertake a comprehensive spending review tasked with identifying sufficient savings to noticeably reduce the deficit.
- Develop a spending rule that supplements objectives for the fiscal balance and debt to underpin fiscal consolidation and economic growth. The target should preferably be expressed as a real level and cover all primary current spending (including entitlements) other than spending associated with the operation of cyclical stabilisers. The underlying revenue baseline should include an adjustment for the commodity price cycle.
- Subject accelerated infrastructure spending to rigorous cost/benefit analysis and transparent procurement and costing procedures.
- Formulate a strategy to deal with loss-making public enterprises, such as rail and the ACC; monitor profitable ones like Kiwibank and their effects on sector competition (see Chapter 2).
- Ensure that pre-funding pensions does not lead to an imprudent build-up in debt given projected deficits.
- Keep the New Zealand Superannuation Fund free from political interference by maintaining the governance arrangements that provide managerial and board statutory independence.

Improve the long-run budget balance:

- Implement parametric pension reform, notably by indexing benefits to the CPI and by raising the retirement age in line with longevity, preferably *via* annual formula-based small steps.
- Undertake further health reforms to get greater value for money in public spending and more burden-sharing by the private sector (see Chapter 3).

Arrest the upward spending bias in local government:

- For funding transparency and accountability, introduce marginal-cost-based user charges on water, sanitation and roads; equalise local council rates for businesses and households; consider adopting a legislated real per capita spending cap with the possibility to override, *e.g.* to finance special projects, only by special voter referendum.

Notes

1. International dairy prices have fallen sharply, with whole milk powder prices down by 55% since July 2008. Fonterra, the large dairy co-operative that is the world's leading exporter of dairy produce and New Zealand's largest company and exporter by far, in late January 2009 announced a forecast payout to farmers for the 2008/09 season at NZD 5.10 per kilogramme of milk solids, the third downgrade in four months. Though still the third highest price on record, it is down markedly from NZD 7.90/kg last year, and implies a 25% cut in expected farmer revenue. Meanwhile, an excess of stocks is putting pressure on storage capacity. An oversupply in response to previous sky-high prices reflects the typical hog-cycle problem. The EU's recent decision to reintroduce export subsidies on dairy produce exacerbates the global excess supply and has been strongly criticised by the NZ government, which is hoping to convince the EU to set time limits on its measure and also to avoid similar measures being taken elsewhere.
2. Housing equity withdrawal (HEW) occurs when the change in borrowing exceeds residential investment. Over the five years to mid-2007, HEW amounted to an estimated NZD 5.7 billion. Since

then, a sharp fall in the value of house sales implies negative HEW (equity injection). An estimated 25-30% of HEW goes to finance consumption spending; this "wealth effect" acts as a major channel of monetary policy transmission. See Westpac (2008).

3. For more information on the impacts of the financial crisis in New Zealand and on policy steps taken and planned as of November 2008, see Reserve Bank of New Zealand (2008a).

4. Fees are 10 basis points of the liabilities covered in excess of NZD 5 billion per institution.

5. Surging fiscal revenues between around 2003 and 2007 was an OECD-wide phenomenon. Joumard and André (2008) trace these to: exhaustion of corporate loss carry-forward provisions, housing bubbles boosting transactions taxes, surging financial-sector profits due to low interest rates and financial innovations, strong capital gains for stockholders and personal income tax bracket creep. These windfalls – only a minor part of which could be ascribed to the cyclical influence but in the end proved temporary – prompted policy measures that permanently weakened budget positions.

6. Part of the increase was "technical", as the reduction in KiwiSaver subsidies (used to pay for tax cuts) does not affect the government's measure of the fiscal stance.

7. The government was content that it had acted as a prudent fiscal guardian. At the time of the first long-term projection exercise, the Minister of Finance stated that the government was coping well with an ageing population and managing public finances within the 2004 Public Finance Act's principles of responsible fiscal management, and that the Opposition's plan for multi-billion tax cuts would have been irresponsible (Cullen, 2006).

8. Estimations for New Zealand suggest an elasticity of private debt with respect to government debt of around -0.5. Empirical studies have shown that roughly 50% of increased public savings tends to be offset by a reduction in private savings (and conversely). See Salgado (2004).

9. See, for example, H. Ergas, "Miracle cure that wastes tax dollars", *The Australian*, 8 October 2008.

10. Rating agencies' valuations of the sovereign risk premium are proprietary and therefore cannot be reported. However, information can be gleaned from credit default swap rates on NZ government bonds, which shot up in early 2009 from about 0.2% to 1.4% (source: *Datastream*, code: NZGVTS5). One caveat, however, is that instability of the data over certain periods shows this market to be possibly quite thin.

11. The Government funds the cost of injury claims that non-earners submit to ACC (Vote ACC). Other injury claims are funded through levies on petrol, earners and employers. In December 2008 the government approved NZD 297 million per annum of additional funding for non-earners. This item was not disclosed in the pre-election update when in hindsight it should have been. Following an inquiry into that non-disclosure, the criteria for disclosure have been clarified and strengthened. Since December, ACC has faced falling interest rates (which increase its liability valuation) and continuing cost and volume pressures. As a result PricewaterhouseCoopers has increased its estimate of the ACC liability at 30 June 2009 by NZD 2.581 billion, from NZD 19.925 billion to NZD 21.875 billion. Unless these recent interest rate and cost trends reverse, ACC will be obliged later in the 2009 calendar year to seek a further increase in the Government's funding of its non-earners' account. In the meantime, updates to liability valuations and asset values are reported in each month's reported Financial Statements of the Government.

12. Just two weeks into the new year, PM John Key stated that the international economy had deteriorated since December and New Zealand was closer to Treasury's "downside scenario" than it was at the end of the year (see "Economy on 'downside' of forecasts", *www.stuff.co.nz*, Thursday, 15 January 2009).

13. Though the top statutory rate of 39% affects only 13% of taxpayers, some 40% of primary earners and over 20% of secondary earners face marginal *effective* tax rates of 39% or more because of abatement of Working for Families transfers, mostly at lower middle income levels (Creedy *et al.*, 2008).

14. The government investment-to-GDP ratio fell from 8% on average during 1962-86 to 4.2% over the period 1987-2010 (the latter part of which is projected).

15. The New Zealand Pension Authority has estimated that the Finance Minister would need to increase the 2009/10 contribution from the NZD 1.97 billion calculated last year to at least NZD 2.3 billion in order to keep pace with the legally prescribed formula (see "Super Fund needs $400 m to keep up", *www.stuff.co.nz*, 23 March 2009).

16. IMF (2007) shows that an increase in real government spending during episodes of capital inflow into the advanced countries was associated with a larger increase in domestic demand and

inflationary pressures, and subsequently harder falls in demand and GDP after capital inflows slow; conversely, fiscal discipline during the boom allows for a softer landing.

17. In this sense, higher revenues than expected on the basis of policies and the domestic economic cycle would boost the amount of gross spending consistent with the operating allowance. By the same token, higher revenues resulting from above-potential GDP growth would not affect the allowance, permitting automatic stabilisers to work fully, although because of reporting lags, the discrepancy between actual and expected cyclical effects is not immediately known.

18. According to Barker *et al.* (2008), allowances for the next budget have been revised frequently and by significant amounts in response to upward revisions of tax revenue forecasts and lower-than-budgeted expenditure.

19. The NZ working-age population is projected to peak at 2.39 million in the mid-2020s, before declining slightly to 2.38 million by 2051 (Statistics New Zealand, *Demographic Trends 2007*).

20. Pension prefunding allows tax smoothing, but could also be seen as a generationally fair, once-for-all adjustment appropriate to address the one-time shift in the dependency ratio arising from the present decline in fertility (in other words, the current generation should have to save more in order to compensate for its failure to have more children). Further dependency increases due to rising longevity with a fixed retirement age clearly benefit future generations; hence prepaying for that part of the fiscal sustainability gap would be unjust and should instead be covered by indexing retirement age to longevity. This strategy also makes the system more robust to the high uncertainty in demographic projections. See Andersen (2008).

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Chapter 2

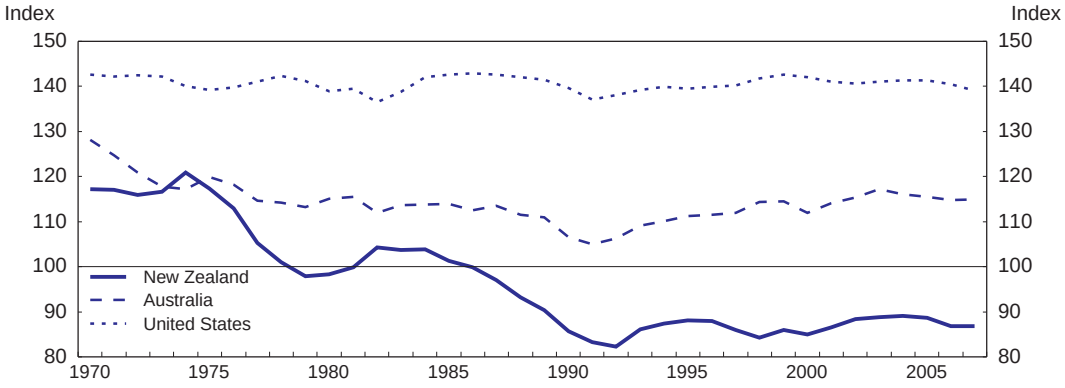
Structural policies to overcome geographic barriers and create prosperity

New Zealand's living standards remain well below the OECD average. This is entirely attributable to persistently low labour productivity, which in turn is related to economic geography as well as structural policy factors. The small size and remoteness of the economy diminish its access to world markets, the scale and efficiency of domestic businesses, the level of competition and proximity to the world's technology frontier. This points to the need for a "New Zealand policy advantage", that is, a set of structural policies attractive and welcoming enough to overcome the geographic handicap and attract the drivers of prosperity – investment, skills and ideas – to New Zealand. The reforms of the 1980s and 1990s laid much of the groundwork for creating this advantage and for a pickup in productivity growth. But in recent years, New Zealand has lost ground relative to its OECD peers. The reform focus has shifted away from growth and the government has introduced a large quantity of often poor-quality regulation. Policies should be refocused around the productivity goal in a number of areas, beginning with those covered in this chapter, namely international trade, the business climate for domestic and foreign investment, public-sector efficiency, infrastructure, innovation and natural-resources management. This chapter also evaluates the recently legislated emissions trading scheme through a productivity lens.

New Zealand is among the most economically advanced and developed countries in the world, with modern, if not world-leading, institutions and policies in many areas. Nevertheless, it is in the lower half of the OECD prosperity rankings. On a purchasing-power-parity (PPP) basis, GDP per capita was USD 27 100 in 2007, about 40% below that of the United States, 25% below that of Australia, and 12% below the OECD average (Figure 2.1).[1] It was not always thus. In the first half of the 1970s, New Zealand's real GDP per capita was only 18% below the United States, approximately equal to Australia's and about 15% above the OECD average. From 1970 to 2006, however, it grew at an average annual rate of only 1.2%, the lowest rate apart from Switzerland among 26 OECD countries with comparable data.[2] During this period, real GDP per capita grew at an average annual rate of 2% in the OECD. Consequently, New Zealand's relative standard of living had already fallen below the OECD average by the early 1980s and bottomed at 20% below the OECD average in the early 1990s, not far below where it is today. After a brief examination of the sources of New Zealand's prosperity gap and the channels through which geography affects economic performance, this chapter reviews recent progress in some structural policy areas and suggests avenues for further improvement. Not all structural policy topics are covered, but Annex 2.A1 provides progress updates on past *Survey* recommendations in policy areas not discussed in the main text.

Figure 2.1. **Real GDP per person**[1]

OECD[2] = 100, at constant 2000 Purchasing Power Parities and constant prices



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1. GDP per capita is calculated in USD at constant prices and constant PPPs.
2. 26 countries, Czech Republic, Hungary, Poland and Slovak Republic excluded.

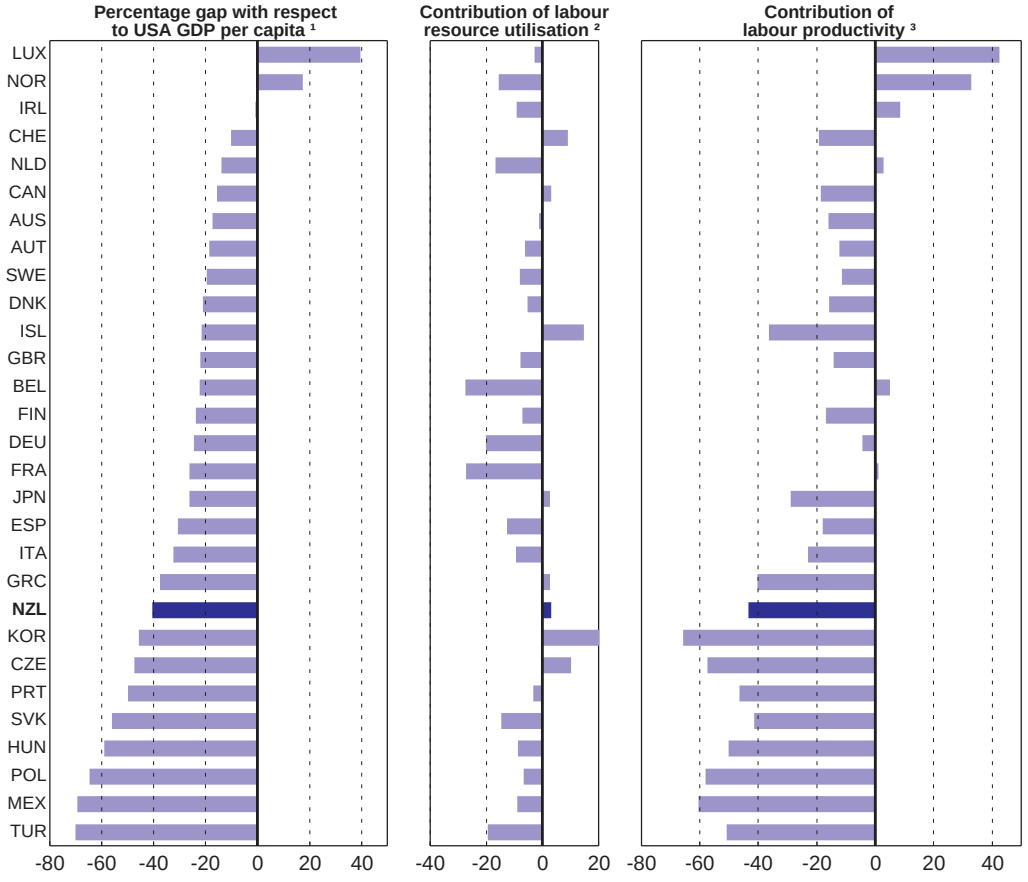
Source: OECD, *National Accounts Database*.

The sources of the prosperity gap

The prosperity gap can be decomposed into labour utilisation and labour productivity components. Labour utilisation reflects hours worked per capita and is influenced by the age structure of the population, the participation rate, the unemployment rate and the

average number of hours worked per employee. Labour productivity measures the value of goods and services produced per hour of work. This decomposition shows that the prosperity gap is due entirely to low labour productivity: New Zealand is currently 22nd out of the 30 OECD countries when measured by GDP per hour worked, the same ranking as in GDP per capita (Figure 2.2). On average, an hour worked in New Zealand produces approximately 30% less output than an hour worked in Australia and 40% less than an hour worked in the United States. On labour utilisation, however, New Zealand performs well. It has the fifth highest labour utilisation rate in the OECD. Reforms have visibly paid off in this area, with many women now in the labour force, a high overall older-worker participation rate and a low unemployment rate. There is little policy makers can do to boost labour utilisation beyond the current level, besides perhaps lengthening working life by putting public pensions on an actuarially fair basis (Chapter 1). Hence, going forward, enhancing labour productivity is the key to closing the prosperity gap and to dealing with the economic and fiscal challenges of an ageing population.

Figure 2.2. **The source of real income differences, 2007**



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1. Based on current purchasing power parities and current prices. For Luxembourg, the population is augmented by the number of cross-border workers in order to take into account their contribution to GDP.
2. Labour resource utilisation is measured as total hours worked divided by population.
3. Labour productivity is measured as GDP per hour worked.

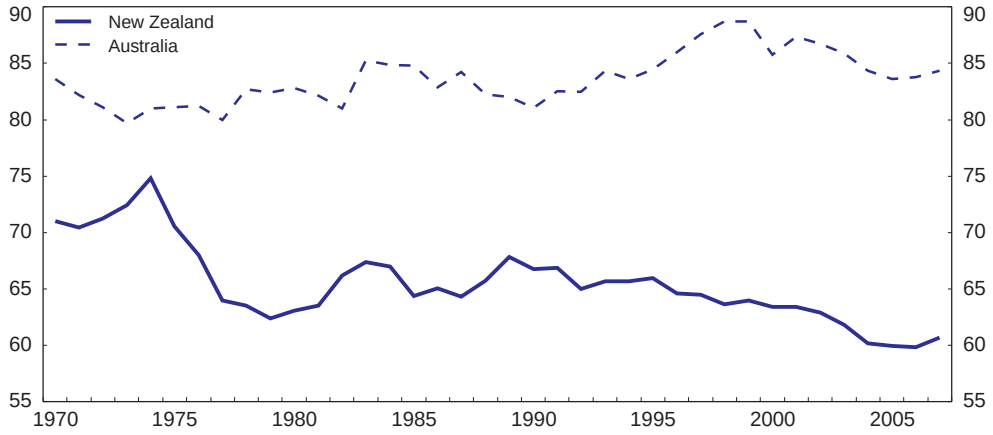
Source: OECD (2009), *Going for Growth*.

Low labour productivity growth

Unfortunately, hourly labour productivity growth has been tepid for a long time, and it has worsened in recent years along with that of most other OECD countries (Figures 2.3 and 2.4). Consequently, New Zealand's gap in GDP per capita has hardly narrowed since its trough in the early 1990s. The modest improvement has been due mainly to rising labour utilisation, which also explains some of the recent weakness in labour productivity growth. The economic upturn from 1999 to 2007 brought many lower skilled people into the workforce and damped average worker productivity (and, by implication, average wage growth). With a short-run elasticity of labour productivity growth to an increase in the employment rate of -0.4 (estimated from a panel of 25 countries), the rise in labour utilisation by about 1% per year from 2001 to 2006 could have depressed average annual labour productivity growth by as much as 0.4 percentage point over this period (Belorgey, Lecat and Maury, 2006). Similarly, compositional changes among workers from 1999 to 2007 may have reduced cumulative real average earnings growth for a full-time-equivalent worker from about 15% to 9% (Maré and Hyslop, 2008). Another factor that could have biased aggregate productivity growth downward of late is the change in the composition of employment by industry, as sectoral labour productivity levels can vary considerably. Earlier strong growth in domestic demand led to an expansion of construction and services relative to goods-producing industries such as manufacturing, where recorded productivity tends to be higher (New Zealand Treasury, 2008). That said, labour productivity growth was weak even before the acceleration in labour utilisation or the rise in domestic demand that began in the early 1990s. The causes of low productivity growth in New Zealand appear to have been entrenched for a long time, suggesting that long-standing structural factors are at work.

Figure 2.3. **Hourly labour productivity**

At constant 2000 purchasing power parities; USA = 100



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Source: OECD, *National Accounts Database* and *Labour Productivity Database*.

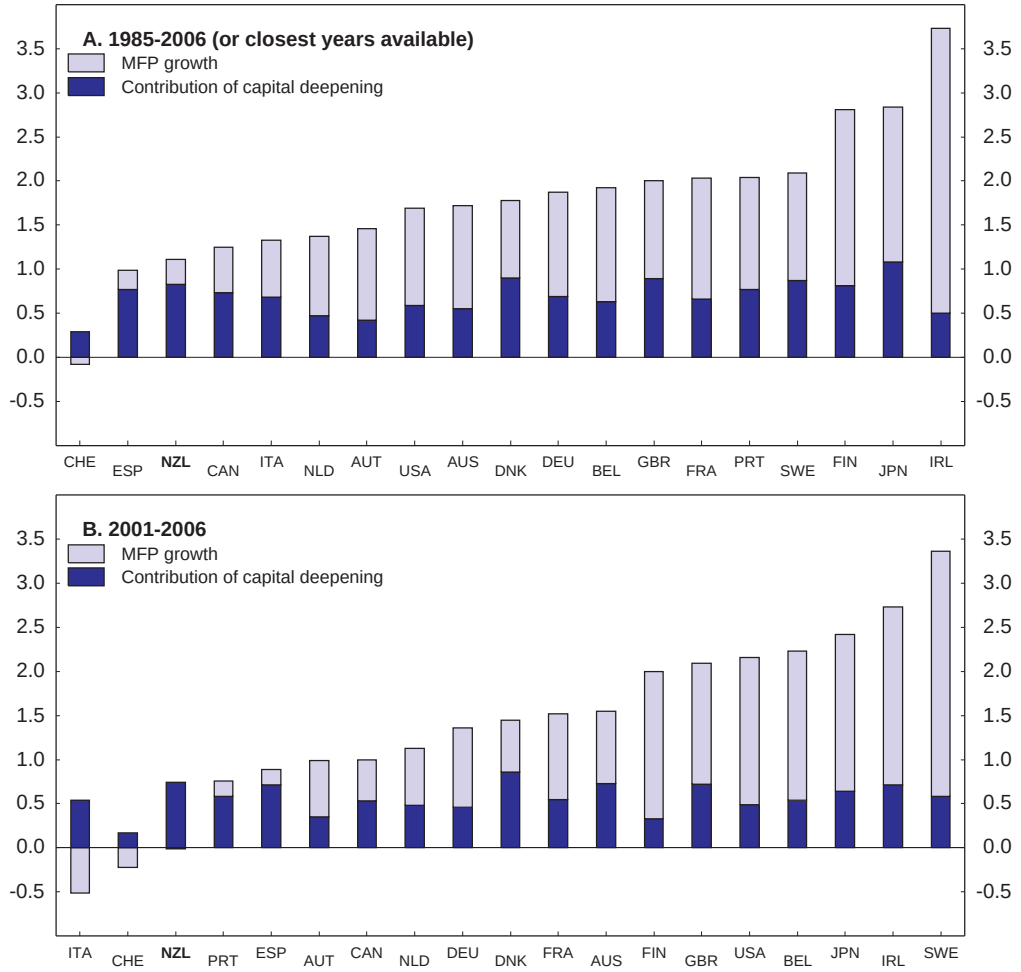
Low capital intensity

The two drivers of labour productivity growth are the accumulation of physical capital through investment and improvements in the efficiency with which labour and capital are combined to transform inputs into outputs, or so called multifactor productivity (MFP)

growth. Hourly labour productivity growth can thus be decomposed into a capital-intensity component and an MFP component. This type of decomposition is problematic for many reasons, not the least of which is the difficulty of obtaining reliable and comparable capital-stock data for many countries. The results are sensitive to the data and measurement concepts used and must be interpreted with care.[3] This decomposition for New Zealand, based on the OECD Productivity Database, suggests that poor MFP growth accounts for most of the low growth rate of hourly labour productivity since 1985. From 1985 to 2006, New Zealand had the fifth highest average rate of capital deepening amongst the 19 OECD countries with comparable data (Figure 2.4, Panel A). More recently, from 2001 to 2006, it had the second highest contribution of capital deepening amongst these 19 countries, trailing only Denmark (Figure 2.4, Panel B). On the other hand, New Zealand has had the third worst MFP growth performance since 1985, one quarter the average rate of its OECD peers. It also ranks third worst in the more recent 2001-06 period. These figures would suggest that a lack of capital investment is not the source of the slow

Figure 2.4. **Decomposition of labour productivity growth into MFP growth and capital deepening**

Total economy, average annual growth rate



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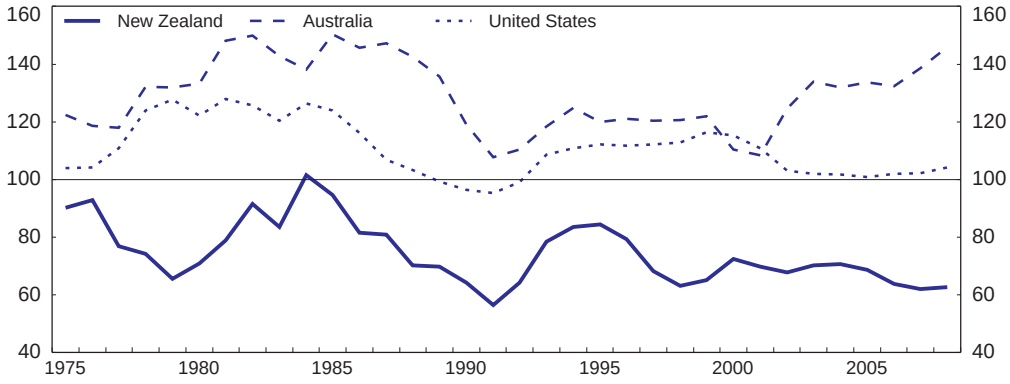
Source: OECD (2008), *Productivity Database*.

rate of hourly labour productivity growth, and that policies should instead focus on raising the growth rate of MFP.

Other evidence on the flow and stock of investment per worker suggests, however, that New Zealand does indeed have an investment problem. On a PPP-adjusted basis, investment per worker was only 63% of the OECD average in 2008 (Figure 2.5).[4] The rate of investment per worker in Australia was more than twice that. Capital intensity also seems much lower in New Zealand. The Ministry of Economic Development and the Treasury (2005) estimated that New Zealand's level of capital intensity in 2002 (capital per unit of labour) was about 71% of the US level and 74% of Australia's level. Using more sophisticated methods, Schreyer (2005) produces even lower estimates for the same year: 49% of the US level and 63% of Australia's. Paucity of capital, while broad-based, is especially apparent in several key domestically oriented sectors. For example, the wholesale trade, retail trade, and transport and storage sectors all have capital per hour worked around half the levels of the United Kingdom (Mason and Osborne, 2007).

Figure 2.5. **Gross fixed non-residential capital formation**

Per worker, at current prices and current Purchasing Power Parities;[1] OECD[2] = 100



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1. PPPs for GDP.
2. Czech Republic, Hungary, Luxembourg, Poland, Portugal, Slovak Republic, Turkey and Mexico excluded.

In any case, capital intensity and MFP interact with each other in various complex ways. MFP growth is mainly driven by the expansion of the world's technology frontier and New Zealand's degree of access to it. But better technology raises the productivity of capital and thus the returns to capital investments, which should increase capital intensity. In addition, lots of new technologies result from innovation and research and are embodied in capital goods, such as new equipment, or intermediate goods. Therefore, the impediments to capital deepening and to MFP growth in New Zealand probably overlap to a large extent. And, given the long period of time over which labour productivity growth has been underperforming, they probably include many long-standing structural factors, including macroeconomic imbalances (see Chapter 1).

Economic geography

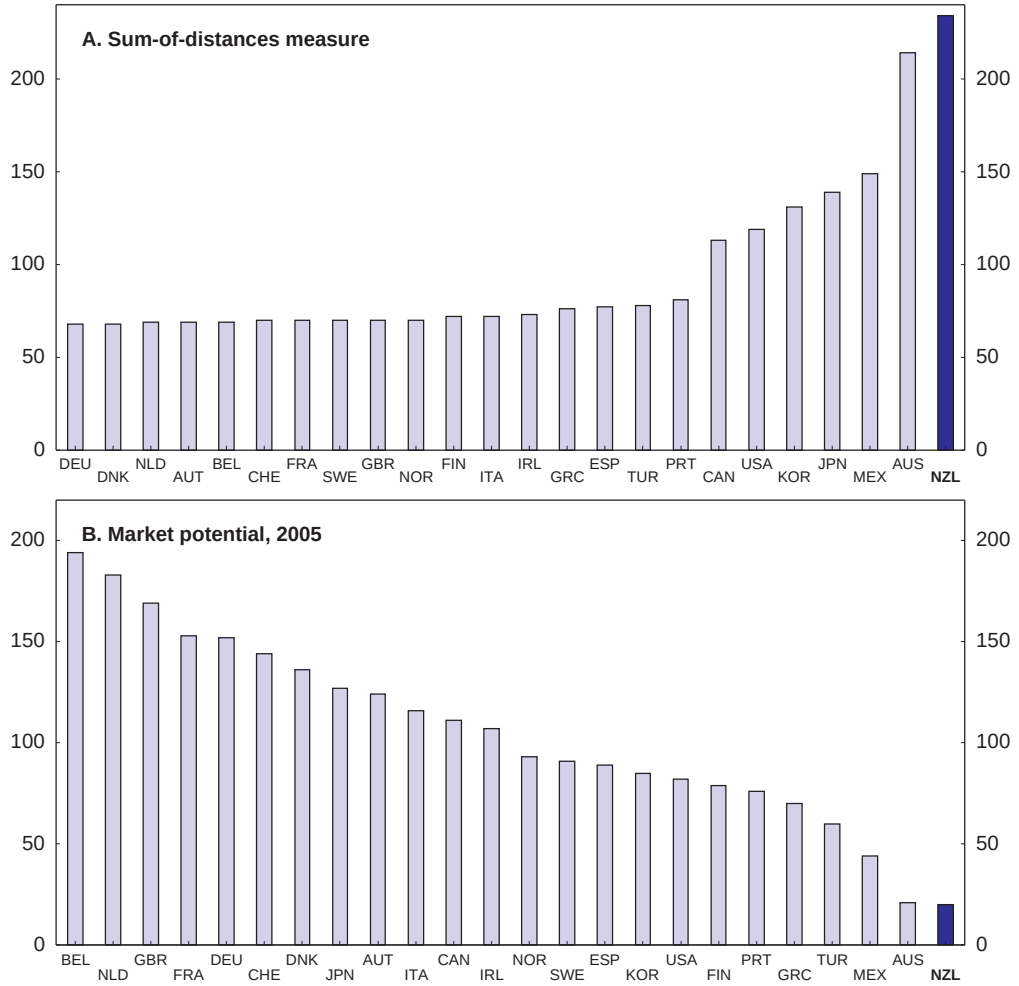
Research suggests that countries that are economically smaller and farther away from international markets are likely to be poorer than those that have larger domestic markets and that are closer. Prosperous countries tend to be built around large affluent agglomerations, but

New Zealand has only one large agglomeration, Auckland, and by international standards even it is not very large. But New Zealand's most striking feature is not its size but its remoteness, which can affect productivity and income levels through various channels, all interrelated, including trade, foreign investment and technology diffusion. There is thus a strong presumption that part of the prosperity gap is attributable to its special geography: no other OECD member has such a striking combination of small size and remoteness.

Distance directly raises transport costs and thereby reduces trade in much the same way as a tax on exports or a tariff on imports. Despite the commonly held view that distance has become less important for trade over time (the so-called "death-of-distance" hypothesis), empirical evidence shows that a 10% increase in distance reduces trade by around 10%, and that this effect has not diminished over the last 30 years (Nicoletti *et al.*, 2003; OECD, 2008b). With 10 000 km to the United States or China and even 2 250 km to Australia, New Zealand is a considerable distance from its main trading partners. Its market potential – defined as the sum of all countries' GDP weighted by the inverse of the bilateral distance from the country under consideration – is only about a fifth of the OECD average (Figure 2.6). Reduced trade

Figure 2.6. **Distance/proximity to markets**

Average across countries = 100



StatLink http://dx.doi.org/10.1787/562755755128

Source: OECD (2008), *Going for Growth*.

opportunities affect domestic productivity in many ways. Low market access limits opportunities for concentrating production in activities where there is a comparative advantage: domestic businesses produce goods that could be supplied more efficiently from abroad, were it not for transportation costs. By segmenting markets, distance also limits the extent to which domestic firms can operate on an efficient scale, an effect magnified by the country's small size. With 4.2 million people, New Zealand is about a tenth as populous as the average OECD country, limiting the extent to which firms can exploit internal economies of scale, benefit from product market competition and gain from specialisation. Moreover, by providing a natural shelter from foreign competition, distance weakens the pressure on domestic companies to be efficient and innovate.

Foreign direct investment (FDI) is also sensitive to distance (Nicoletti *et al.*, 2003). While FDI theory suggests that firms will invest abroad rather than supply foreign markets by exporting where trade costs are high, distance can still affect FDI negatively, all else equal, if the costs of operating overseas affiliates rise the further they are from the multinational's headquarters. Studies indeed show a negative elasticity between FDI and distance, of -0.42 in Di Mauro (2000) for instance.[5] A 10% increase in distance would thus reduce FDI flows by about 4%, a smaller effect than on trade, but significant nonetheless. No doubt lower FDI inflows due to remoteness explain part of New Zealand's low capital intensity.

But the most important effects of trade and FDI on a country's prosperity may well be through their roles as channels of technology diffusion. In many economic growth frameworks, convergence in per capita income ultimately depends on the degree of international technology diffusion, with trade and FDI being the two main channels of knowledge spillovers between countries (Coe, Helpman and Hoffmaister, 2008). Moreover, as pointed out above, distance can reduce the degree of competition in the domestic economy, and a major determinant of a firm's decision to acquire existing technology and innovate is the degree of product market competition it faces. Empirical evidence confirms the effect of distance on technology diffusion. Based on the productivity effects of R&D expenditures in the G7 countries between 1970 and 1995, the geographic half-life of technology, that is, the distance at which half of the technology has disappeared, has been estimated at 1 200 km, with most of the effect (around two-thirds) occurring through the trade channel (Keller, 2001 and 2002). There is little doubt then that New Zealand's access to the world's technology frontier is impaired by its small size and remoteness, and that it suffers a permanently lower level of GDP per capita as a result.

Altogether, recent OECD work on economic geography for *Going for Growth* confirms that economic-geography factors account for a large part of the prosperity gap. While the OECD methodology is unable to quantify the relative contribution of different transmission channels, it generates estimates that New Zealand's distance to markets reduces its GDP per capita by about 10% (Boulhol, de Serres and Molnar, 2008; Boulhol and de Serres, 2008; OECD, 2008b). By comparison, remoteness reduces Australia's GDP per capita by about 10% as well, while the effect for the United States is very close to zero. According to these estimates then, geographical location may explain up to three quarters of the gap in New Zealand's living standards relative to the OECD average, but virtually none of the gap relative to Australia.

It is important to interpret this result correctly. It means that the GDP per capita gap cannot, on its own, serve as a measure of unfinished policy business. It does not mean,

however, that New Zealanders cannot aspire to close the prosperity gap with other countries. But it suggests that to do so, New Zealand will have to do better than its OECD peers. Unlike some of them, it cannot rely on closeness to other large markets to compensate for mediocre policies. Though blessed with abundant natural resources, the work just cited finds that these make a small negative contribution to GDP per capita, perhaps because fluctuations in their prices add to macroeconomic volatility. Going forward, the continuing integration of China, India and eventually other Asian countries into the global economy will keep shifting the centre of economic gravity away from Europe and North America and toward Asia, improving the position of New Zealand relative to key markets and lessening the negative impact of economic geography. At the same time, it is likely to increase competition, as some domestic markets will become easier to supply from overseas, which puts a premium on building a competitive business environment. To attract increasingly footloose talent, skills, capital, technology and entrepreneurship from around the world, then, New Zealand must offer a better policy environment than can be found elsewhere, one attractive enough to overcome the obstacles posed by economic geography. To do so, it must be at the forefront of OECD policymaking by seeking not only to emulate OECD best practices in every policy area, but to go beyond them, relentlessly and consistently, so as to create a distinct New Zealand advantage.

Create an international economic integration advantage

It is essential for a small open economy like New Zealand to be an active and consistent supporter of free international trade and investment.[6] As the previous section's discussion suggested, an outward orientation accelerates technological innovation and diffusion in the domestic economy, allows specialisation to take place by procuring the relevant economies of scale, guarantees access to international markets, and strengthens the competitiveness of domestic firms by subjecting them to invigorating international competition. New Zealand has already achieved a great deal on this front, having eliminated most tariffs, duties and quotas and having negotiated several bilateral trade agreements, most recently with China and the Association of Southeast Asian Nations (ASEAN). Unfortunately, it continues to be handicapped by other countries' high levels of agricultural protection. Nevertheless, more can be done to deepen integration with world markets. Steps that could be taken include simplifying administrative procedures and costs associated with international maritime trade, and adopting a more welcoming attitude toward incoming foreign direct investment.

Facilitate maritime trade

Because of the importance of maritime exports and imports to the New Zealand economy, anything that hampers maritime trade is likely to be a significant constraint on economic performance. These constraints are reflected in the costs of shipping goods by sea. Distance, volumes and product characteristics are important determinants of maritime transport costs, but port efficiency is also critical. In turn, port efficiency depends on governance and competition within the sector, on the quantity and quality of infrastructure, as well as on administrative overhead costs due to regulations.[7] It is thus important for New Zealand's economic potential that regulations do not unnecessarily inflate transport costs, that the infrastructure necessary to deliver goods and services to other markets is efficient, that port governance is appropriate for the sector and that a healthy level of competition exists.

Although New Zealand scores relatively well on World Bank indicators that measure the ease of trading across borders, some other OECD countries do far better, suggesting that improvement is possible (Table 2.1). Some of the policies that have been implemented in recent years by countries seeking to cut the time and costs associated with trade include providing electronic filing of trade documents (through electronic data interchange systems), allowing shippers to declare manifests online, reducing document requirements and using risk-based inspections. Another approach is to provide a single window for obtaining different permits and authorisations to reduce the time spent preparing documents. In Denmark, for example, three main trade documents (bill of lading, commercial invoice and customs declaration) suffice for most trade transactions. And these are transmitted online. Traders can begin the clearance process before goods arrive at the port. Because risk-based inspections apply, only about 2% of cargo is physically inspected. It takes only five days for goods to leave the factory, clear customs and be on a vessel heading to their destination. The resulting gains in trade can be substantial.[8] Comparing New Zealand's performance to those of leading countries such as Denmark, France and Finland suggests that it should be able to cut the number of documents required to engage in trade by half, cut the number of days required to clear customs by the same proportion and reduce costs per inbound or outbound container by about 25%. According to a conservative empirical estimate, such a reduction in transport costs could potentially boost its bilateral trade by about 10% (Djankov, Freund and Pham, forthcoming).

Table 2.1. **Ease of trading across borders**

Indicator	**New Zealand indicator**	Leading OECD country	Indicator for leading OECD country
Documents to export (number)	**7**	France	2
Time to export (days)	**10**	Denmark	5
Cost to export (USD per container)[1]	**868**	Finland	495
Documents to import (number)	**5**	France	2
Time to import (days)	**9**	Denmark	5
Cost to import (USD per container)[1]	**850**	Finland	575

1. The costs required to import and export include the costs of obtaining all the documents, inland transport, customs clearance and inspections, port and terminal handling. They do not include overseas shipping costs, bribes or tariffs.

Source: World Bank (2008), *Doing Business 2009: Comparing Regulation in 181 Economies*, World Bank, Washington.

Port governance, ownership structure and competition shape incentives for operating efficiency and for the provision of appropriate infrastructure. In New Zealand, ports are largely owned by local authorities, which may have objectives, often political ones, other than maximising the long-term return on assets. Sure enough, the return on port assets is below the cost of capital (McDouall Stuart, 2006). Moreover, local-government ownership leads to infrastructure duplication and to a lack of co-ordination in decision-making. Ports say consolidation is needed to reduce these problems and enhance their negotiating position *vis-à-vis* ever stronger international shipping conglomerates, which enjoy an exemption from domestic competition laws. Privatisation of port assets, in part or in full, could help bring market discipline to port operations, raise the return on assets and facilitate raising capital. Some consolidation would likely occur, and competition concerns could emerge, but these are best dealt with by existing institutions such as the Commerce Commission.

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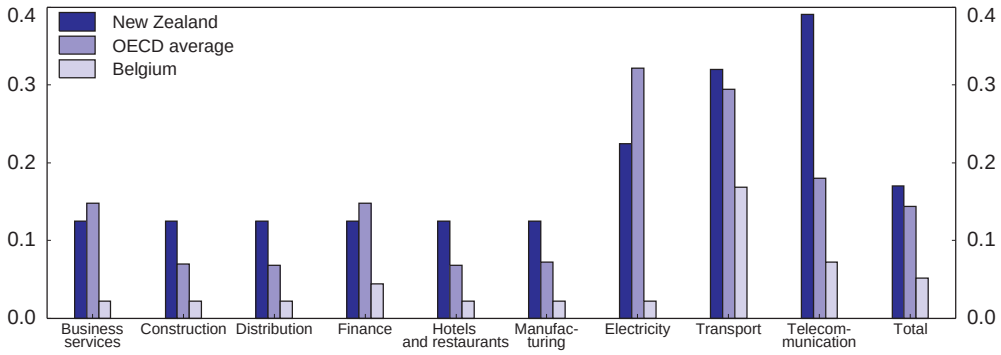
Improve the business environment for foreign investment

In response to investment opportunities offered by the retreat of government from many sectors in the 1980s and 1990s, inward direct investment increased steadily (Golub, 2003). Today, New Zealand has one of the highest stocks of inward FDI relative to GDP among OECD countries. Despite this good performance, OECD comparisons suggest that New Zealand could do even more to create a welcoming environment for FDI. The latest OECD FDI restrictiveness indices show that in 2006 FDI restrictions in New Zealand were still above OECD averages in six out of the nine sectors examined (Figure 2.7).[9] As suggested in the discussion on economic geography, meeting average OECD levels of restrictiveness is unlikely to be enough to substantially boost FDI and benefit from the growth spillovers that go with it. Instead, New Zealand should target best practices by emulating leading countries, such as Belgium, which show that it is possible to reduce FDI restrictions to well below OECD averages, if not to eliminate them completely.

Figure 2.7. **FDI regulatory restrictiveness in nine sectors,[1] 2006**



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1. The indicators take into consideration discriminatory barriers to entry – relative to domestic investment – in the form of limitations on foreign ownership, special screening procedures that apply only to foreign investors, as well as post-entry management and other operational restrictions. The total score ranges between 0 and 1, with 0 being completely open and 1 completely closed. See Annex 6.A2 of the source for more details.

Source: OECD (2007), *International Investment Perspectives*.

Ease screening requirements

Disaggregating FDI restrictiveness indices into different sources shows that screening requirements in New Zealand are some of the highest among OECD countries. One way in which screening requirements are typically implemented is by requiring a FDI "net benefit test" for the host country, that is, the foreign investors presenting an application must demonstrate that the investment will benefit the host economy.

Unfortunately, such screening requirements can be used to limit investments for non-economic reasons. A high-profile example is the New Zealand government's refusal in 2008 to allow the Canada Pension Plan Investment Board (CPPIB) to purchase a 40% stake in Auckland airport, an offer that had been approved by shareholders. The government introduced a new factor that the Overseas Investment Office (OIO) must consider when evaluating if a foreign investment on "sensitive land" is beneficial.[10] The new criterion requires the OIO to assess "… whether the overseas investment will, or is likely to, assist New Zealand in maintaining New Zealand control of strategically important infrastructure on sensitive land". After appraisal by the OIO, two government ministers are required to

make a decision. In the airport case, the ministers were not satisfied that the benefit to New Zealand criterion was met. They therefore rejected the application. A subsequent bid by the State Grid Corporation of China for the Vector Wellington Electricity Network was not subject to the new factor because the electricity network is not located on sensitive land. By creating uncertainty and a lack of transparency around the approval process, this type of retrospective and arbitrary intervention by the government into international investment transactions sends the wrong signal to foreign investors.

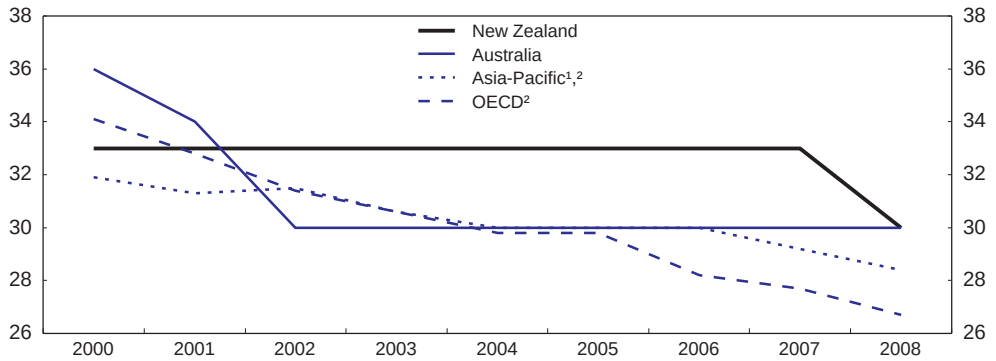
Almost all applications for foreign investments are eventually accepted, but many take a long time to get approval. As a result some investors may prefer to invest in countries where screening requirements are less of an obstacle. One way to reduce the screening requirement while preserving the option for government to deny an investment it judges truly harmful to the country is to transfer the onus from the investor to the minister who must then, in a case where an investment is denied, demonstrate that the investment would do net damage to the economy. Such a rule would send better signals to foreign investors and would force a greater degree of transparency regarding the justification for turning down an investment. Some OECD countries have totally eliminated screening requirements for foreign investments, and New Zealand should consider doing so as well to improve its foreign investment climate.

Lower the corporate income tax

Another way in which New Zealand could encourage foreign, as well as domestic, investment is by lowering the corporate income tax rate. Business taxes are among the most harmful to growth (Johansson *et al.*, 2008). They lower all forms of income (including wages) more than other types of taxes, such as value-added or payroll taxes. They also harm a country's attractiveness to foreign investors, and this effect may be particularly acute for smaller countries or those facing comparative disadvantages related to distance or transaction costs (OECD, 2007d; Hajkova *et al.*, 2006).

New Zealand has a relatively high rate of business taxation (Figure 2.8). An earlier small advantage was eroded, as for a long time New Zealand kept its corporate tax rate

Figure 2.8. **General corporate income tax rate**



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1. Asia-Pacific includes Australia, Bangladesh, China, Fiji, Hong Kong SAR, India, Indonesia, Japan, Korea, Macau, Malaysia, New Zealand, Pakistan, Papua New Guinea, Philippines, Singapore, Sri Lanka, Taiwan, Thailand and Vietnam.
2. Unweighted average.

Source: KPMG (2008), *KPMG's Corporate and Indirect Tax Rate Survey 2008*, KPMG, United Kingdom.

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constant while other countries brought theirs down. Only in 2008 did it cut its rate from 33% to 30% to match Australia's, but the rate remains above the OECD average (26.7%) and the Asia-Pacific average (28.4%). Besides discouraging both domestic and foreign investment, high corporate taxation relative to other countries creates incentives for multinational firms to thinly capitalise their operations, or use transfer-pricing schemes to funnel profits away from New Zealand and into lower-tax jurisdictions. New Zealand does have tax rules against thin capitalisation and transfer pricing, but they are difficult to enforce and can thus never be completely effective.

Instead, New Zealand should catch up with the well-established OECD trend and further reduce its rate of corporate tax. Lowering it to at least match the OECD average would eliminate a competitive disadvantage relative to many Asia-Pacific and OECD countries and encourage multinational companies to locate in New Zealand to service the Asia-Pacific market. A meta-analysis of many empirical estimates suggests that each percentage point cut in the corporate tax rate causes the stock of FDI to increase by 3.3% (de Mooij and Ederveen, 2003). As the current stock of inward FDI in New Zealand is around NZD 96 billion, a cut in the corporate tax rate by one percentage point could potentially increase the stock of FDI by NZD 3.2 billion (approximately the combined market capitalisation of the 3 largest public companies in New Zealand as of November 2008). The lost revenue could be made up by raising taxes that are less detrimental to growth and that do not affect business investment as much, such as the value-added tax (see the section below on shifting the tax mix).

The investment relationship with Australia is worth special attention. Australia is the largest source of foreign investment in New Zealand, with about a third of the total, while New Zealand is the fourth largest source of foreign investment in Australia. As part of the two countries' efforts to create a single economic market, they should continue working towards an agreement for the mutual recognition of imputation credits in their tax treatment of foreign investment. Imputation (or "franking", as it is called in Australia) is a mechanism which provides credits against personal taxes on dividends received by shareholders for taxes paid at the company level. New Zealand and Australia are the only two OECD countries to have retained imputation systems as integral parts of their tax systems. The relief is generally restricted to company taxes paid within the jurisdiction, and foreign taxes therefore do not give rise to imputation credits. This means that there is a single layer of tax on domestic profits, but two layers of tax on foreign-source profits when they are distributed to domestic shareholders. Mutual recognition of imputation credits would remove investment biases and create long-term dynamic benefits by promoting productivity growth and international competitiveness in both countries. An efficiency case could be made for New Zealand's unilateral recognition of imputation credits, even without reciprocal action by Australia, but such a move would entail smaller benefits and a higher fiscal cost.

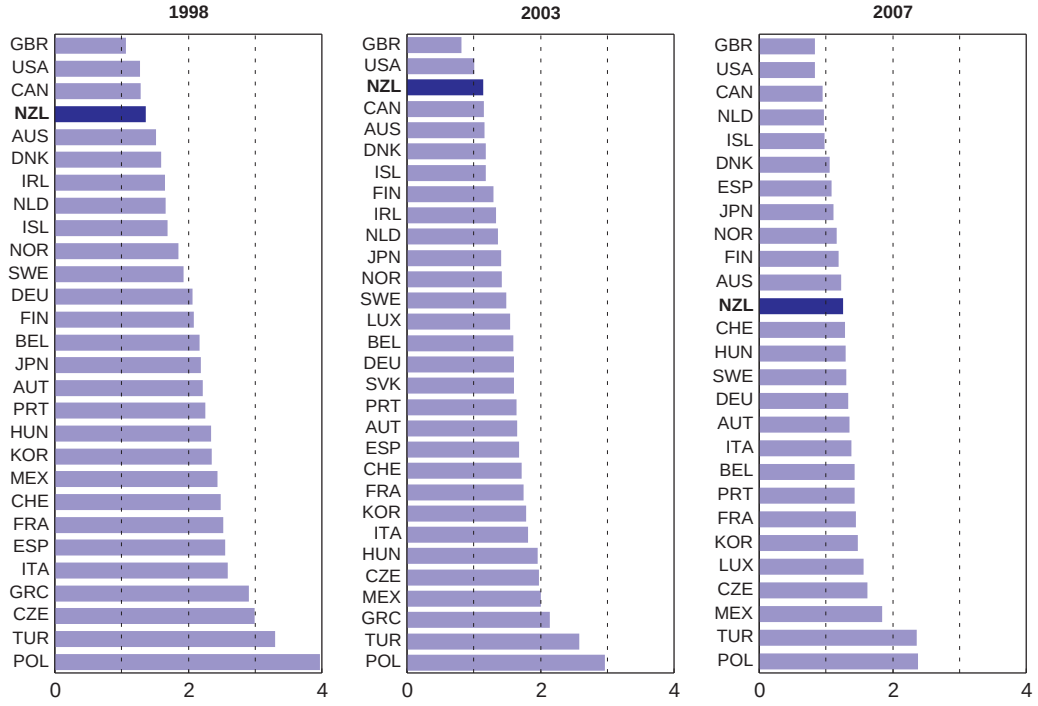
Create a public-sector advantage

The comprehensive market-oriented reforms implemented between 1984 and 1993 opened up the economy to foreign capital and international trade, dramatically reduced government assistance to industry, abolished agricultural subsidies, corporatised and privatised many state-owned enterprises, decentralised the employer-employee bargaining process and shifted from universal provision of social welfare to a tightly targeted system. Structural policy indicators showed the fruits of these intensive reform

efforts. According to the OECD's aggregate index of product market regulation (PMR), New Zealand had one of the most liberal regulatory regimes among OECD members in 2003. To this day, it scores relatively well on some PMR sub-indicators, a situation reflected in other rankings like the World Bank's, where New Zealand scores first among OECD countries for the ease of starting a business, and second among 181 countries for the ease of doing business generally (World Bank, 2008). Deservedly then, New Zealand has often served as an example of liberalism in policymaking. Between 2003 and 2007, however, progress stalled, and in some areas appears to have reversed (Figure 2.9). Whereas most OECD countries continued to liberalise product markets during this period, the OECD aggregate PMR indicator shows New Zealand making no progress, so that it now scores only average among OECD countries (Wölfl *et al.*, 2009). Such results support anecdotal evidence to the effect that the previous government's philosophical orientation toward liberalisation and the benefits of free markets had shifted from that prevailing during the reform era, giving rise to a number of concerns around incentives for productivity growth.

Figure 2.9. **Product market regulation index**

Indicators scale: 0-6 from least to most restrictive



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Source: OECD, *Regulatory Database*.

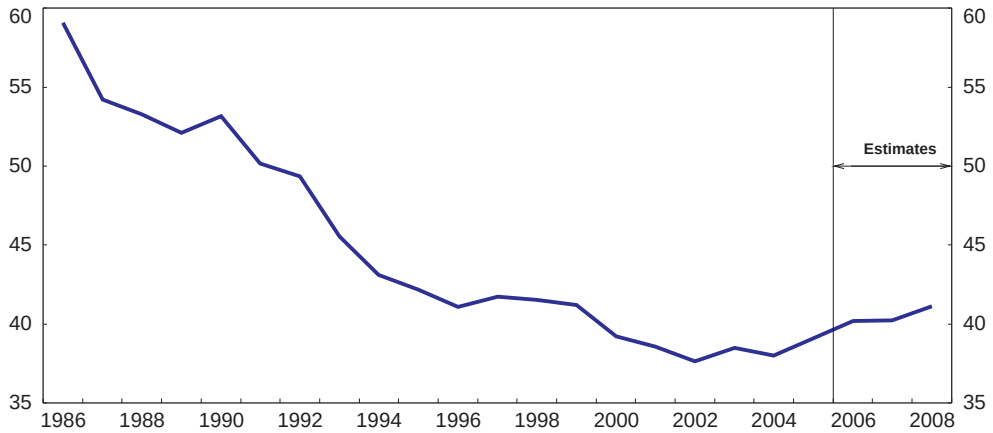
Improve the efficiency of public expenditures

Starting in the late 1980s, New Zealand's ambitious reform programme was accompanied by fiscal reforms that sought to boost the quality and reduce the level of public spending. Reforms began with one of the OECD's most aggressive corporatisation and privatisation programmes which, combined with an efficiency drive, reduced the level of public spending

from more than 50% of GDP in 1986 to a low of 37.7% in 2001. Since then, however, government spending has been creeping up again (Figure 2.10). In the last year for which data are available (2005), total government expenditures were 39.9% of GDP. Econometric evidence for OECD countries indicates that large government size may be detrimental to growth in living standards (Afonso and Furceri, 2008). This evidence shows that each percentage point increase in total government spending as a share of GDP reduces the growth rate of real GDP per capita by 0.13 percentage point per year. The recent rapid rise in government expenditures (by 2.2 percentage points in only four years) is thus a disquieting development for an economy already suffering from sluggish per capita GDP growth.

Figure 2.10. **Total general government expenditure**

As a percentage of GDP



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Public expenditures have risen disproportionately in three areas: education, policing/corrections and health, driven largely by personnel increases and wage settlements. The former government, which actively encouraged the use of multi-employer collective agreements (MECAs), made large settlements with teachers and nurses, but wage increases in the rest of the public sector have been on par with the private sector. However, they have seldom been linked to expected efficiency or productivity gains. Also, staggered negotiations in different sectors have from time to time threatened the government with the closure of important services, but compromises have generally been reached and industrial action averted. The new government may wish to consider reducing the use of MECAs to strengthen its bargaining position. Where possible, it should also seek better information on public-sector outputs to be able to tie future wage increases to measurable productivity outcomes. The OECD has recommended giving government managers stronger incentives to identify and implement efficiency improvements through well-designed performance targets supported by robust information systems, especially in health and education (OECD, 2007c). Some actions have been taken in both of these sectors to develop performance measures (see Chapter 3 for more on performance measurement in the health sector). Still, the long-term drive to raise the efficiency of government expenditures should be more ambitious and cover the public sector as a whole. The goal should be to allocate spending across departments and within departments using an integrated cost-benefit framework that takes into account the likely social returns on

different types of public spending, both historical and new, as well as the general efficiency costs of raising tax revenues (more on the latter below). The new government has promised a comprehensive spending review, a positive first step that should evolve to something more systematic.

Beyond spending growth in traditional sectors of government activity, concerns around public-sector efficiency arise out of a recent spate of nationalisations that suggests the former government was backtracking on the privatisation efforts of the past two decades and expanding into areas where governments typically make poor decisions. For example, in May 2008, the government announced that it had agreed to buy back the loss-making rail and ferry assets owned by Toll New Zealand (part of Australia's Toll Holdings), which had purchased them in 2003. The terms of the deal have been heavily criticised as very poor for taxpayers, in effect amounting to a bailout of a privatised company. The government is expected to hand over responsibility for running the rail and ferry businesses to a new SOE. The railway is expected to be a loss-making venture for the foreseeable future, however, giving weight to the argument that the repurchase was an inefficient use of public money.[11] Moreover, the new rail funding does not go through the newly created New Zealand Transport Agency – charged with prioritising transport investments based on cost-benefit analysis – making it even more likely that new rail investments will be uneconomic. The objective should instead be to have a rail policy integrated with the rest of transport policy. Given the critical nature of the transport sector for overcoming geographical barriers, it is essential to promote an efficient allocation of resources within it.

The re-nationalisation of a number of enterprises in recent years, including Air New Zealand, and now these rail and ferry businesses, is a trend that goes against the tide of privatisation in developed economies since the early 1990s. At the same time, the government maintains ownership stakes in industries as diverse as power generation, banking and coal extraction. There is no fundamental economic rationale for government ownership in these sectors beyond perhaps a transitory phase. Consequently the return on capital in many SOEs is poor. In many cases the SOE model was intended to be temporary, but the assets have remained on the government's balance sheet and are not performing well. Exiting these businesses would not only improve the efficiency of public spending and potentially lead to better performance in the company or sector itself, it would send more favourable signals to foreign investors. Unfortunately, the new government has promised not to divest any SOE assets during its first (three-year) term in office, though this promise not to sell does not exclude greater private-sector participation in areas of SOE activity.

Reduce distortions in the tax system

Raising revenues imposes costs on the economy because taxes distort labour supply, saving and investment decisions, resulting in lost output value to society. The cost from tax distortions can be considerable. To the extent that research findings from the United States can be applied to New Zealand, raising an additional dollar of revenue may cost the economy approximately 18 to 24 cents (Robson, 2007; Diewert and Lawrence, 1996). That is, if taxes increase by NZD 1, taxpayers bear a cost of NZD 1.18 to 1.24: the NZD 1 in revenue and 18 to 24 cents from accompanying distortions. This additional cost, the deadweight loss, means that to be economically justified the last dollar of government spending must generate a social return of at least 18%, net of any additional administrative or production costs. It is doubtful whether many projects currently pass this benchmark

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test, starting with recently nationalised assets. Other recent initiatives that may imply inefficient expenditures include interest-free student loans, saving subsidies within KiwiSaver, and significant increases in health expenditures (see Chapter 3). To have a better idea, the government should support independent research to estimate the deadweight economic losses associated with its tax system. It would then be in a better position to evaluate the minimum required social return on existing and new expenditures.

The efficiency with which government raises revenues in New Zealand could be improved by shifting the tax mix to raise a higher proportion of revenues *via* more efficient taxes. The relative efficiency of different taxes depends on the extent to which they alter relative prices in the economy and thus affect decisions regarding saving, investment, effort and entrepreneurship. One measure of the efficiency of a tax is its marginal efficiency cost (MEC). As suggested above, the MEC of the tax system as a whole is perhaps between 0.18 and 0.24, but this average would hide a lot of variation in the MECs of different taxes.[12] Taxes on income and profits (the corporate and personal income taxes) distort economic activity to a greater degree than consumption-based taxes, and, as stated above, the corporate income tax is particularly harmful to growth (Johansson *et al*., 2008). The reason is that corporate income taxes (and other business taxes) are taxes on business investment, one of the main sources of labour productivity growth, and hence of income growth. When business investment is taxed heavily, there is less of it because this form of spending switches externally to lower-tax countries (see section above on FDI), and internally to lower-tax forms of spending, which are not directly connected to productivity growth. In addition, because of the relatively thin domestic capital markets and the scarcity of domestic savings, most small businesses finance their growth through retained earnings.[13] A low general corporate income tax is thus especially critical to encourage the growth of small businesses.

Worryingly then, New Zealand raises the highest share of total tax revenues through income and profit taxes (62%) among OECD countries (average of 36%), though the New Zealand figure is somewhat distorted because it is the only OECD country to have neither social security nor payroll taxes.[14] Nevertheless, as the previous *OECD Economic Survey of New Zealand* recommended, it should increase its reliance on indirect consumption taxes, for example by raising the efficient and broad-based GST rate and lowering income and profit taxes (OECD, 2007a). Flattening the tax structure – bringing the rates of tax on various kinds of income and profits closer together – would also help improve the efficiency of the tax system. The large discrepancies between the top personal tax rate (39%), the trust rate (33%), the portfolio investment entity rate (30%) and the corporate tax rate (30%) are the sources of much tax planning, administrative waste and investment distortions. The new government has chosen to reduce the top personal tax rate, from 39% to 38% in 2009 and 37% in 2010, going some way toward flattening the tax structure, but gaps will remain large. The long-term goal should be to bring all these tax rates in line with one another at internationally competitive levels, which will require further cuts in both personal and corporate rates. On the personal tax side, thresholds should also be looked at, as failure to index them for many years has pushed up effective tax rates. The threshold for the highest personal tax rate is much lower than in Australia, for instance. The common labour market with Australia has increased the mobility of the personal tax base, so lower effective personal tax rates would help attract and retain skills. It would also help attract investment, since much of it hinges on the presence of a skilled

labour pool. Other measures suggested in the previous *Survey* that would help reduce economic distortions and raise the overall efficiency of tax system include lowering the effective marginal tax rate associated with the Working for Families package and removing exemptions to the corporate tax base.

Financial market regulation

Along with reform efforts in many other areas, New Zealand substantially reformed its financial sector in the 1980s and 1990s. Beginning in 1984, it abolished interest-rate controls, floated its currency, lifted restrictions on balance-sheet structures, relaxed financial-sector entry restrictions, removed limits on foreign ownership of companies, privatised state-owned financial institutions, did away with foreign-currency borrowing restrictions and implemented an independent monetary policy with a clear inflation target. These far-reaching reforms helped bring about sustained economic growth, lower unemployment and milder inflation.

New Zealand tops the World Bank ranking for the strength of investor protection along with Singapore, but this statistic is somewhat misleading, as these rankings capture only the most basic features of legislation necessary for adequate investor protection (World Bank, 2008). Until recently, New Zealand's approach to public supervision and regulation of financial institutions had been based on disclosure and market supervision. For banks, which are mainly subsidiaries of Australian banks, the framework of well-established and rigorous requirements for bank authorisation, comprehensive disclosure regime and clear, conservative capital requirements, has proven robust. As the global financial crisis unfolds, New Zealand banks remain among the most highly-rated in the world. Weaknesses became apparent in the non-bank financial sector, however (see Chapter 1). So in 2008, the government changed the law to strengthen prudential regulation and oversight, particularly for non-bank deposit-takers.

First, the government improved consumer access to redress in the financial sector by setting up a registration system for financial-service providers and requiring that they belong to an approved dispute-resolution system. Providers are defined broadly to include banks, credit unions, building societies, managed funds, securities issuers, finance companies, foreign-currency dealers, insurers and insurance brokers. The new registry will be kept in electronic form and will be searchable by the public. Existing voluntary, industry-based dispute-resolution schemes, such as the Banking Ombudsman, and the Insurance and Savings Ombudsman, already provided access to redress for consumers, but they did not extend to credit unions, finance companies, financial advisers and some superannuation schemes.

Second, with the Financial Advisers Act 2008, the government established an occupational licensing regime for financial advisers supervised by the Securities Commission. This new regime imposes statutory conduct and disclosure obligations on financial advisers. Civil and criminal penalties are attached to the new Act.

Third, the government has decided that the Reserve Bank will become the single prudential regulator of the financial system, including non-bank deposit takers (including finance companies, building companies and credit unions) as well as insurance companies, in addition to its existing oversight role for traditional banks. Among other powers, the Bank's expanded role will allow it to require deposit takers to have a credit rating, to have a risk-management plan that they adhere to and to impose requirements

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relating to capital, liquidity, and related-party exposures. In the insurance sector, the Bank's role will include licensing insurers and enforcing disclosure requirements, including insurers' financial-strength ratings.

And, most recently, intensification of the financial crisis in October 2008 and Australia's introduction of a deposit guarantee scheme forced the New Zealand government to introduce its own explicit deposit-guarantee scheme. Australia and New Zealand had been the only two OECD countries without deposit insurance. The new deposit-guarantee scheme covers all retail deposits of participating New Zealand-registered banks as well as retail deposits in non-bank deposit-taking entities – including building societies, credit unions and deposit-taking finance companies – up to a cap of NZD 1 million per depositor per covered institution. Collective investment schemes (such as portfolio investment entities and unit trusts) will also be able to claim on the guarantee provided they meet certain conditions (*i.e.* they must wholly invest in guaranteed institutions). Institutions are free to opt in or stay out of the scheme, but it is expected that all eligible institutions will participate. A premium-financed deposit-insurance system would have been preferable to a guarantee, but circumstances meant New Zealand had to quickly introduce its own scheme. At the time, the guarantee was the only choice as legislative options were not feasible. In time, this guarantee should be removed. One possibility is to move to an insurance system with full, risk-based funding (see Chapter 1).

All these measures, once fully implemented, should provide greater protection to retail depositors and help them assess the soundness of different financial institutions. These extra protections and tools should bolster general confidence in the New Zealand financial sector and increase the willingness of households to save in assets other than housing.

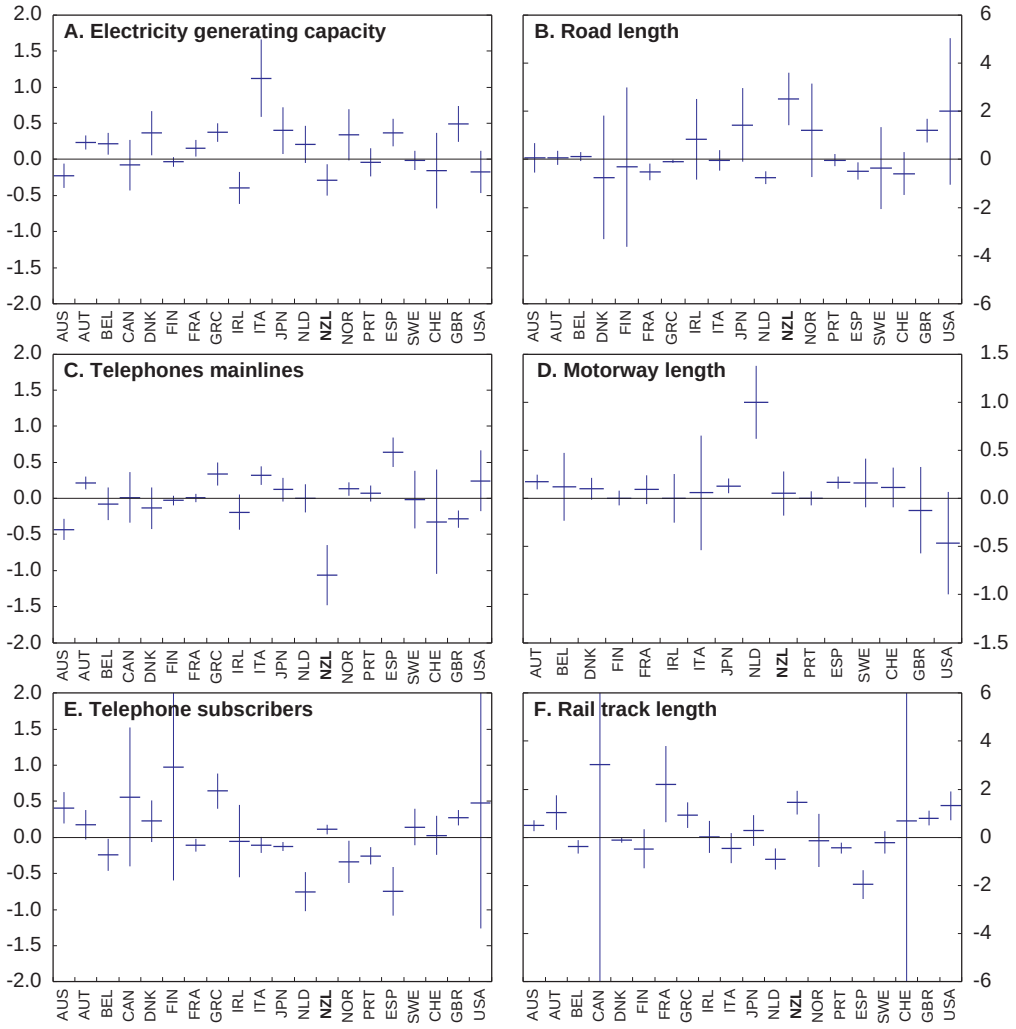
Create an infrastructure advantage

According to the World Economic Forum's latest Executive Opinion Survey, inadequate infrastructure is the most serious barrier to doing business in New Zealand (World Economic Forum, 2008). When public expenditures were restrained during the reforms of the mid-1980s to the early 1990s, infrastructure investments were particularly affected because delayed impacts made them attractive targets for cuts. Deferred maintenance has since accumulated, and infrastructure bottlenecks are starting to show up, particularly in electricity transmission and roads in and around Auckland. Public expenditures on infrastructure have risen significantly in recent years, but it will take some years before the impact is visible. The new government also appears serious about tackling infrastructure problems, naming an infrastructure minister and setting up a new infrastructure unit within the Treasury. Infrastructure in energy, transport, water and communications is an important focus of public policy for two main reasons. The first is that these sectors rely mainly on fixed networks to deliver their services. Investments in such capital are often lumpy, irreversible and subject to natural monopoly forces. As a result, public policy is important to ensuring socially appropriate provision. The second is a strong presumption from economic theory that infrastructure investments can have positive effects on growth that go beyond normal additions to the capital stock. This is because investments in network industry infrastructure are thought to yield positive externalities on other sectors. For instance, better communications infrastructure can facilitate collaboration among workers and raise their productivity. This last characteristic makes achieving optimal levels of infrastructure in network industries especially important. Empirically, however,

the link between infrastructure investment and growth has traditionally been difficult to pin down. The direction of causality is hard to determine convincingly and appears to depend on the country, sector and existing level of provision. Recent cross-country studies have used sophisticated econometric techniques to untangle these effects and have confirmed that greater provision of broad measures of infrastructure is associated with higher subsequent growth rates (Canning, 1999; Demetriades and Mamuneas, 2000; Esfahani and Ramirez, 2003). Recent OECD work also finds that the contributions of infrastructure to long-run output levels and growth go beyond normal additions to the capital stock (*i.e.* they generate positive externalities) and that they are not homogenous across countries (Égert, Koźluk and Sutherland, 2009) (Figure 2.11). In New Zealand's case, this work indicates that past investments in road infrastructure have yielded the greatest growth benefits.

Figure 2.11. **Impact of infrastructure investment on living standards**[1]

1960-2005



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1. Horizontal bars represent coefficient estimates from time-series growth regressions. Vertical bars are the 90% confidence intervals around these estimates. Because the regressions already include infrastructure investment in the variable for total investment, a positive coefficient indicates that the effect on output per capita is greater than the effect arising from a general increase in the capital stock. For further details see the source.

Source: Égert, Koźluk and Sutherland (2009).

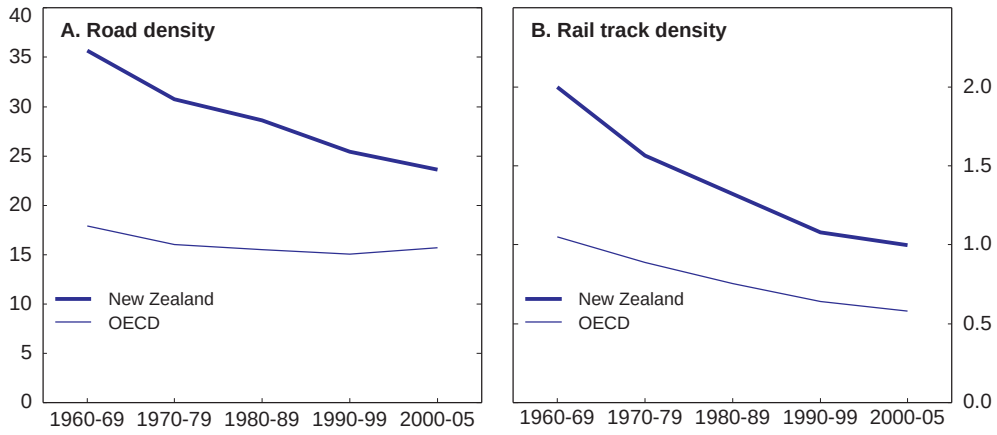
Upgrade road infrastructure

Transport infrastructure is critical to the economic agglomeration process, and the economic-geography literature makes it clear that economic agglomerations raise productivity through a number of channels, from improving linkages between firms to creating deeper labour markets. For instance, the Auckland region, New Zealand's largest and most densely populated, accounts for 33% of national employment and 40% of value added in the economy, though it occupies only 2% of New Zealand's land area. Labour productivity and wages in the Auckland region are above those in other areas of the country. Wages are around 7% higher and average personal income is around 15% higher. Even after adjusting for industry-composition effects, labour productivity is greater by 25% (Maré, 2008). When congestion and other negative externalities outweigh the productivity benefits, however, agglomeration effects and productivity are constrained. The balance between these forces determines optimal city size and overall living standards. Transport investments that increase connectedness within and between cities and that reduce negative externalities such as congestion can therefore raise the cross-over point and boost productivity (Grimes, 2007 and 2008). This was the case for example in the United States after the construction of the interstate highway network (Fernald, 1999).

The evidence is accumulating that transport infrastructure bottlenecks may be hindering the process of economic agglomeration and dragging down New Zealand's productivity potential (The Allen Consulting Group, 2004; PricewaterhouseCoopers, 2004; Ministry of Transport, 2006). Road and rail density, though still higher than OECD averages, have been falling quickly in New Zealand, suggesting a lack of investment (Figure 2.12). The quantity and quality of roads in particular appear to be deficient, a situation reflected in rising congestion and higher road fatalities than in other OECD countries.[15] More and higher-quality roads could potentially reduce both, in addition to their positive effects on economic growth. Indeed, the OECD work cited above on the link between infrastructure and growth finds that New Zealand is the country with the highest estimated effect of road density on economic growth across all OECD countries (Figure 2.11). This result reflects a high *average* growth impact from investments in the New Zealand road network since the 1960s, going beyond the normal return to capital stock increases. End-of-sample

Figure 2.12. **Transport infrastructure**

Km per 1 000 population



StatLink http://dx.doi.org/10.1787/562855314842

Source: Égert, Kożluk and Sutherland (2009).

analysis suggests that the return has not fallen in recent years. Although one must be careful to extrapolate from a long-run average return into the future, the strength and robustness of the result are highly suggestive of substantial remaining opportunities for beneficial road investments. The policy reason for such high historical returns is that, with a low funding envelope relative to needs, road projects used to be financed if the estimated benefit-costs ratio was greater than four (implying a required rate of return of 50-60%). Such a high hurdle rate meant that many good projects were not funded, and the funded ones were weighted toward short-term returns. A lot more money is now being put into the National Land Transport Fund, and the benefit-cost ratio required to exhaust the fund has recently fallen significantly.

Even with high estimated average returns, it remains important to subject each individual project to a cost-benefit analysis. Starting in 2004, as a consequence of the New Zealand Transport Strategy (NZTS) as well as a number of regional transport packages, the former government appeared to move away from the cost-benefit approach in determining funding priorities. The NZTS provides strategic direction for the transport sector as a whole for the next 30 years using a large number of targets, for instance halving per capita greenhouse gas emissions from domestic transport by 2040. But the need to consider a range of potentially conflicting targets has probably led to funding some projects that have relatively low benefit-cost ratios. In particular, there have reportedly been changes made to the original scope of some projects that, had they been evaluated in their entirety right from the beginning, would likely have never been approved. It thus seems important to reinforce the "value-for-money" principle within the NZTS, so that all projects, additions included, be systematically subjected to rigorous cost-benefit analysis. It is also important not to let environmental or political considerations and objectives supersede the requirement for transparent cost-benefit evaluation.

To help reduce road-transport bottlenecks, the OECD (2008d) has also recommended adopting road-pricing arrangements, such as tolls and congestion pricing. Before undertaking investment in new capacity, it is indeed important to ensure that best use is made of existing infrastructure. Congestion charges and user fees (*e.g.* tolls) can play a key role in ensuring efficient use of scarce infrastructure and also give more accurate signals of where additional capacity may be warranted. The previous government ruled out congestion charges in Auckland, but it was increasingly looking to move beyond fuel taxes as the principal source of financing for roads and to focus on more direct user charges. The first toll road, Auckland's Northern Motorway Extension, opened in early 2009. In some cases, implementation could be rapid as the infrastructure already exists. For instance, because there is no diesel tax in New Zealand, heavy diesel vehicles are subject to a road user charge. The equipment used to calculate road use in these vehicles could be used to introduce time-of-use charges that reflect congestion.

Upgrade electricity-sector infrastructure

Time series growth regressions for New Zealand show significant negative average returns to investments in electricity generation since 1960 (Égert, Kożluk and Sutherland, 2009) (Figure 2.11). This result may seem surprising, given the electricity shortages that afflicted the country during the 2008 drought period and widespread grid problems since then. Part of the explanation may be overinvestment in the past. New Zealand's energy mix includes a large amount of reservoir hydro, and because of the geography of its rivers, it has only about 12 weeks of reservoir storage under normal circumstances. To avoid being

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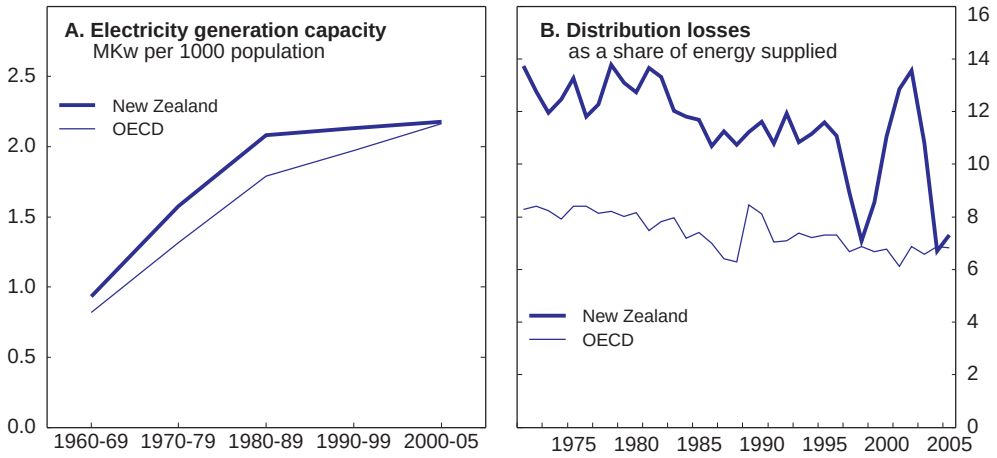
energy-constrained – by the maximum amount of water that can be held behind its dams – it has built substantial excess hydroelectric capacity in years past, which may have led to low average returns compared to other countries. Growth in generation capacity has slowed since the end of the 1980s, however (Figure 2.13, Panel A). Rapid economic expansion since then, coupled with a series of low hydro inflow years since 2000, has heightened concerns about security of supply and spot-price volatility. Apart from the obvious problems that electricity shortages would present in a modern economy, price volatility and supply constraints send negative signals to potential investors. Fuelling strong investment and economic growth in the future will require matching growth in the electricity supply and confidence as to its reliability. This will require new investments in both generation and transmission.

Figure 2.13. **Electricity infrastructure**



StatLink http://dx.doi.org/10.1787/562866534354

Source: International Energy Agency and Égert, Kożluk and Sutherland (2009).

The Electricity Commission, established in 2003, is the main government body responsible for ensuring security of electricity supply, which in New Zealand can be threatened by prolonged droughts. In the event a dry hydro sequence occurs, leading to an energy shortage and rising electricity prices, the Commission has several tools at its disposal: it can run the Whirinaki reserve generating station and determine the price at which its supply is offered into the spot market; it can run a conservation campaign and/or purchase load reductions (if the system enters what is termed the emergency zone); and, as a last resort, it can initiate rolling power cuts. None of these interventions is desirable, however, as they amount to government management of energy-price risks, which blunts private-sector incentives for new generation investments. For instance, the government's operation of the Whirinaki station when the price of electricity reaches a given threshold acts as a "soft" price cap – it buffers the price when the plant is the marginal generator (International Energy Agency, 2006).[16] Price capping removes a material portion of the potential returns to new plants that would come on during periods of peak consumption (likely thermal or geothermal plants). So even though Whirinaki improves the short-run reliability of supply, it undermines long-run reliability through reduced incentives for investment. Somewhat ironically, this makes it more likely that future peaking capacity will also need to be funded by government. To improve private-sector investment

incentives, Whirinaki's output should always be priced at least to cover the full cost of its fuel, and ideally it should be priced at the value of lost load (the estimated spot market value of the marginal MWh not supplied). Eventually, the government should find ways to devolve energy-price risks completely to private market participants, which would include privatising current government-owned generators.

Besides insufficient non-hydro generation capacity in dry years, another risk, termed locational-basis risk, stems from geographically matching supply and demand for electricity. New Zealand's high-voltage network is a radial network; it is long and stringy as opposed to a meshed network. It also has no interconnections with other countries. These two characteristics mean that generation is not always geographically well matched with load centres. Distribution losses occur when the market operator must take higher priced power to meet demand in particular areas that lower priced generation cannot serve because of transmission constraints. Such losses have tended to be higher in New Zealand than in the rest of the OECD and spiked around the turn of the century, suggesting the presence of distribution and interconnection constraints that may also be partly to blame for recent shortages (Figure 2.13, Panel B). Very little had been spent for many years on upgrading the grid, but since the Electricity Commission was established in 2003, providing more regulatory certainty to the sector, grid investments have increased significantly. From less than NZD 100 million per year between 1995 and 2005, grid expenditures of more than NZD 400 million per year are planned from 2009 to 2014.

The development of liquid and transparent financial markets to hedge energy-price risk and locational-basis risk would allow the government to shift more of these risks onto private market participants and help create better incentives for private investments in both generation and transmission. For instance, exchange-based forward and futures contracts for electricity supply could be designed to force financial penalties on generators unable to meet contractual obligations, creating strong incentives to build reserve capacity. They would also alleviate incentives for vertical integration between generators and retailers. Currently, retailers cannot readily hedge price risk financially by purchasing futures contracts for power, so they can either take on the risk themselves and buy all electricity on the spot market, or they can own generating capacity outright. It is not surprising, then, that the five main generators are also the five main retailers, which has led to concerns regarding anti-competitive behaviour. Anti-competitive behaviour by generator-retailers during recent low hydro inflow years is currently being investigated by the Commerce Commission, which underlines another policy danger to investment incentives. Even if prices were sending efficient signals for optimal investment today, investors might justifiably balk at the prospect that government intervention might alter the picture in the future. For instance, investors may hesitate to commit resources to new generation in an environment where they fear the Commerce Commission could intervene and limit spot prices in dry-year periods. The very long planning horizons involved in electricity generation projects and investors' dislike of uncertainty calls for government to provide as much certainty as possible through clear, transparent and stable regulatory frameworks and policies. To this end, the government may need to provide improved guidance to the Commerce Commission so that it considers dynamic competition effects. Finally, better demand-side incentives to use electricity efficiently can help reduce loads in times of system stress and thus the likelihood of shortages. Many of New Zealand's approximately 1.9 million meters are about 50 years old and are in the process of being replaced. The new meters will enable new retail offers, greater choice for consumers and a

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wider range of load-management options. Getting to this point requires major revisions to metering administration, however. The Electricity Commission is currently reviewing metering arrangements with a view to updating them to reflect the latest developments in technology, services and standards.

Facilitate telecommunications infrastructure investment

One final cause for concern regarding New Zealand infrastructure is relatively limited broadband Internet penetration. In June 2008, New Zealand ranked 19th out of 30 OECD countries with 20.4 subscribers per 100 inhabitants, a little below OECD average (21.3), but substantially below leading countries, which have above 30 subscribers per 100 inhabitants. By comparison, Iceland, another relatively small and isolated country, has a penetration rate above 30. Low broadband penetration in New Zealand does not stem from low availability or affordability. Fixed-line-based broadband is available to approximately 93% of all lines, and either wireless- or satellite-based service is available to the remainder. Recent benchmarking exercises have also revealed pricing to be competitive, with New Zealand consistently ranking in the top third of OECD pricing for all broadband categories (Commerce Commission, 2008). Average broadband speeds are, however, lower than in leading countries such as Japan, Korea and Finland, so it is likely that take-up is lower in New Zealand because broadband does not provide a sufficient speed advantage over dial-up to justify the price difference. New Zealand had the sixth fastest rate of increase in broadband penetration across the OECD in the year to June 2008, an encouraging development, but substantial investments in broadband infrastructure appear necessary if it is to catch up to leading countries in terms of speed and penetration. Such investments would be undertaken by the private sector where they are commercially sensible, but regulatory uncertainty may be blunting incentives for large-scale capital projects. The lack of regulations around evolving fibre-access monopolies and recent regulatory interventions following infrastructure investments have sent a message to investors that the government is likely to intervene after infrastructure is built to regulate pricing or other aspects of the market, thus reducing incentives to invest in the first place. The government should enhance regulatory certainty by providing more guidance to the Commerce Commission and potential investors around the regulatory framework in this sector. It can further facilitate private investments by removing existing regulatory barriers, a case in point being the Telecommunications Service Obligation (TSO, also called the "Kiwi share"). Among other mandates, the TSO obliges the incumbent telecom operator, Telecom New Zealand, to provide residential customers with a free local-calling option. By artificially subsidising dial-up internet service, this obligation may be a disincentive for broadband investments and may be delaying broadband uptake.

Create an innovation advantage

A central determinant of labour productivity growth is the rate of innovation: new ideas and technologies that improve the efficiency with which firms and workers use the capital at their disposal. Innovation is important in its own right, and it interacts with human capital on many levels. Higher skills foster greater levels of innovation and entrepreneurship and increase the ability of the economy to absorb, implement and adapt ideas generated by others. Innovative firms tend to shift the composition of their workforce toward more skilled labour through recruiting and training, and such shifts are often accompanied by higher productivity and higher wages for skilled employees (Ahn, 2001).

Total R&D spending and business R&D spending in New Zealand are both below OECD averages, and by wide margins (OECD, 2008c). Gross domestic expenditure on research and development (GERD) was 1.2% of GDP in the last year for which data are available (2005), compared to an OECD average of 2.3%. New Zealand's GERD ratio has been at the low end of the ranking for some time and looks particularly deficient in relation to the United States (2.6%), as well as leading countries such as Sweden (3.7%), Finland (3.5%) and Japan (3.4%), or another small isolated country, Iceland (2.8%). The absence of a defence sector in New Zealand goes some way toward explaining the low rate of public-sector R&D spending, but business R&D spending is also particularly low. Only about 42% of R&D expenditure is business financed (BERD), compared to an OECD average of 69%. This means BERD is about 0.5% of GDP, less than a third of the OECD average of 1.6%. Industrial structure does not appear to be the main culprit: a decomposition of aggregate R&D intensity into an industry-intensity component and a structural component shows that the gap in overall R&D intensity between New Zealand and the OECD average is due mainly to low within-industry R&D intensities (Di Maio and Blakeley, 2004).

As the above statistics suggest, New Zealand R&D is dominated by public funding, mainly for research taking place in universities and Crown Research Institutes (CRIs). As a result, the pure research/innovation environment is relatively good, but the development and commercialisation of new ideas on the business side is fairly weak, which suggests poor linkages between public research institutions and firms. This situation is worrisome because business R&D appears to be one of the most powerful drivers of economic growth. In an earlier comprehensive econometric study of the growth performance of Member countries over the period 1970 to 2000 that looked at a variety of growth determinants, the OECD found that one of the strongest in terms of magnitude and statistical significance is BERD as a percentage of GDP (OECD, 2003). The estimated effect is remarkably strong: an increase of 0.1 percentage point in BERD intensity ultimately raises real output per capita by approximately 1.2%. The same study found no statistically significant effect of public R&D spending on growth, an important reason why policy makers should be more concerned with the development and commercialisation of new ideas than with public or even total R&D spending. This cross-country evidence is corroborated for the New Zealand case by a more recent study that found a positive impact on labour productivity from private R&D investments over the period 1962-2002, but no productivity gain from public R&D investments (Johnson, Razzak and Stillman, 2007). This study also found that private R&D in certain industries raises output per person in the rest of the economy (*i.e.* it generates positive spillovers), but publicly provided R&D does not.

There is evidence that the combination of distance from major world centres, the high proportion of small firms, elevated rates of self-employment and the relatively large size of the agricultural sector account for most of the difference between New Zealand's business R&D intensity and those of other OECD countries (Crawford *et al.*, 2006). That New Zealand's geography would explain at least part of the low R&D activity in the country seems plausible, given other findings on the importance of geographical distance for technology diffusion cited above (Keller, 2001 and 2002). In any case, disappointing innovation statistics have led over the years to numerous calls for measures to improve the nation's performance. Despite natural factors that may militate against locating R&D activities in New Zealand, there are certainly aspects of the policy environment that can be improved. The new government has signalled it is taking a different approach to encouraging business-sector R&D by cancelling the R&D tax credit introduced in

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April 2008 by the previous government. It nevertheless promised to use a third of the money thus recuperated (which amounts to about NZD 100 million per year once fully implemented) to fund science. As the above discussion suggested, government policy should focus on improving the links between existing public research organisations and firms.

Ties between public-sector researchers and businesses can be fostered in several ways to facilitate the commercialisation of new ideas and thus improve the rate of return on public-sector R&D spending. One such way could be greater use of co-funding between government and industry for R&D activities. For instance, in 2008, the previous government announced the creation of New Zealand Fast Forward, a fund to finance R&D investments in the pastoral and food industries. That government committed to a capital investment of NZD 700 million over the next 10-15 years. Businesses in this industry would have been expected to match the government's commitment on an annual basis. With accrued interest, the fund was expected to grow to around NZD 2 billion over this period. An appointed board was to manage the fund's investments, with the objective of helping to connect primary-sector producers and manufacturers with scientists and researchers. The new government has indicated that it will disestablish the fund and replace it with direct annual funding for primary-sector R&D. It would be desirable for the new programme to retain some of the good aspects of Fast Forward, such as industry partnership and co-funding.

Another way to strengthen ties between public-sector researchers and firms is through the use of contestable and performance-based research funding. This type of funding already exists, with performance measured along a number of dimensions, for instance the number of journal citations, adjusted by a set of weights. But the weights could be re-jigged to give greater importance to industry collaboration, for example by directing public funding for science projects on the basis of how much private sector funding they attract. Yet another way to increase R&D linkages between the public and private sectors is to set up systems for the exchange of people between CRIs and firms. Finally, improving the co-ordination of different support systems for R&D should be on the agenda. An OECD review of New Zealand's innovation policies in 2007 mentions the fragmented system of government support to R&D and innovation as a potential R&D barrier (OECD, 2007b). A lack of coherence across a range of innovation-related policies can make it difficult to allocate public resources in a strategic manner and can result in wasteful duplication of effort and a sub-optimal scale for many support programmes.

It is important to remain realistic in aspirations for more business innovation, however. For a small country like New Zealand, which undertakes only a tiny proportion of global innovation (about 0.2% of total R&D in the OECD), the much larger share of R&D activities carried out abroad, and improvements in the ability to draw on international innovations, imply that the ultimate sources of domestic productivity growth lie increasingly abroad. Therefore, policy must go beyond domestically sourced innovation and encourage international linkages that give access to the most up-to-date technology that is available globally. At the same time, domestic activities and policies can have a significant impact on the ease of technology diffusion. OECD work shows that having a critical mass of domestic research capabilities may be important to a country's receptivity to ideas from abroad (Jaumotte and Pain, 2005). Many of the structural policy orientations described previously would help facilitate foreign technology adoption. To mention only one, new technologies often come embodied in capital goods, so a welcoming environment for FDI and business investment is critical to upgrading New Zealand's technology base.

The adoption of new product and process innovations increasingly requires a skilled, adaptable workforce so building human resources in science and technology is important as well.[17] Policies that strengthen international research mobility can keep scientists up to date with the latest developments in their field, encourages the cross-fertilisation of skills, approaches, techniques, and ideas as well as knowledge exchanges. On that score, a recent OECD cross-country comparison shows that New Zealand is relatively good at providing scholarships, fellowships, grants and other programmes to attract researchers into the country, but it has relatively few programmes aimed at giving people the opportunity to study/research abroad (OECD, 2008e). Facilitating greater "brain circulation" would strengthen New Zealand's position in the global competition for talent and encourage knowledge transfers from abroad. Other areas worthy of improvement to raise the general level of qualifications are expanding the number of countries from which degrees are recognised, educating more foreign students and keeping a greater number of them in the country after graduation, perhaps by facilitating residency for recent foreign graduates.

Create an environmental advantage

To be sustainable, economic growth must occur with acceptable environmental effects. Regulatory and economic frameworks that encourage sustainable investments and quick response to emerging resource constraints are thus critical for sustainable productivity growth. At the same time, if it is not well designed, environmental policy has the potential to hinder economic growth and quash New Zealanders' aspirations to close the prosperity gap with other countries. This delicate balance is at the heart of the debate surrounding the Kyoto Protocol and New Zealand's recently legislated emissions trading scheme.

Amend the emissions trading scheme

As a very small country, New Zealand's total greenhouse gas emissions (GHGs) are only about 0.3% of global emissions. Nevertheless, per unit of GDP, it is the second-highest emitter in the OECD, behind Australia, and it has the 12th highest per capita emissions in the world (Ministry of Economic Development, 2007). Moreover, its distinctive emissions profile compared to other developed countries makes it particularly difficult to reduce emissions quickly. First, about half of all emissions come from the agricultural sector, mainly from livestock. As a result, carbon dioxide makes up a smaller proportion of emissions (47%) than the developed-country average (75%), while methane represents a much more significant component (35%). Opportunities to reduce agricultural emissions are limited in the near term and uncertain going forward, as reducing methane emissions from ruminants is particularly challenging. Second, whereas most other developed countries are looking to their power-generation sectors to achieve large emissions cuts, New Zealand generates about 70% of its electricity from renewable sources (with 60% from hydro), so the scope to lower emissions in power generation is limited. Instead, the most salient opportunities for emissions savings are in energy efficiency and transport (transport accounts for about 20% of emissions). Owing to historically low energy prices, energy efficiency is generally low. For instance, many older homes have poor thermal insulation. New Zealanders also have high rates of car ownership, with one of the oldest and dirtiest car fleets in the world, and public transport is relatively undeveloped.

Nevertheless, New Zealand is a signatory to the Kyoto Protocol and so far appears intent on meeting its Kyoto commitment to reduce its GHG emissions back to 1990 levels, on average, over the period 2008 to 2012 (the first commitment period). However, the latest

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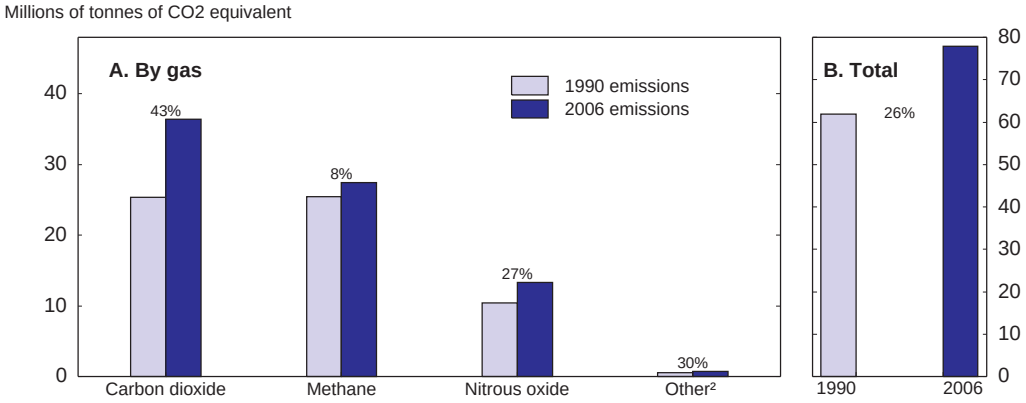
inventory shows that domestic emissions were still increasing. In 2006 they were about 26% higher than they were in 1990 (Figure 2.14). If no action is taken to reduce them, total emissions would be around 30% over target by 2012. Consequently, as of 31 January 2009, New Zealand's Kyoto liability for the first commitment period was officially estimated at NZD 549 million.[18] To meet its Kyoto obligations, New Zealand's options are either to incur the cost of purchasing units on international markets to cover excess domestic emissions, or to cut emissions to reduce the liability. Either strategy is sure to impose significant economic costs. If international permits are purchased, New Zealanders bear the direct cost of the permits and the indirect costs of raising the required revenues through the tax system. In addition, the wealth is transferred overseas. If instead domestic emissions are reduced, firms and individuals will respond to the higher carbon price by changing the composition and manner of production, giving rise to adjustment costs. An ideal global climate-change policy would achieve the right balance between reducing emissions domestically and purchasing international permits, that is, it would insure that emissions reductions occur where they are least costly by integrating all trading and achieving a single world carbon price.

Figure 2.14. **Change in greenhouse gas emissions from 1990 to 2006**[1]



StatLink http://dx.doi.org/10.1787/562881764288

1. Figures exclude the emissions and removals from the land use, land-use change and forestry (LULUCF) sector.
2. Includes sulfur hexafluoride, hydrofluorocarbons and perfluorocarbons.

Source: Ministry of Environment, New Zealand's Greenhouse Gas Inventory 1990-2006.

In September 2008, the outgoing Parliament passed legislation for the introduction of the New Zealand Emissions Trading Scheme (ETS). The ETS is notable because it will cover all sectors of the economy and all six Kyoto Protocol GHGs (carbon dioxide (CO_2), methane, nitrous oxide, sulphur hexafluoride, hydrofluorocarbons and perfluorocarbons) by the time it is fully implemented in 2013. Coverage of the different sectors will be phased in over time, with forestry having begun in 2008, stationary energy and industrial processes starting in 2010, liquid fossil fuels and transport in 2011, and agriculture, waste and all remaining sectors in 2013 (the inclusion of agriculture in an ETS would be a world first). The point of obligation in each sector has been chosen primarily on technical considerations to facilitate monitoring.[19] The unit of trade will be a New Zealand Unit (NZU). Each NZU represents one tonne of CO_2-equivalent emissions. Firms that emit more than their allocated NZUs must buy extra permits; firms that emit less can sell their surplus permits. A positive effect of the ETS is that, by including forests retroactively to the beginning of 2008, it has reduced the rate of deforestation due to the conversion of forests

to agricultural land. This rate of conversion was intensifying in recent years because of high commodity prices.

Risks

New Zealand's heavy reliance on emissions-intensive primary export industries exposes its economy to carbon-price uncertainty.[20] This exposure is magnified because competitors in New Zealand's main export markets tend to be located in emerging economies that are unlikely to join a post-2012 Kyoto-like scheme in the short to medium term. Opportunities for "leakage" – economic activity moving from New Zealand to other countries to escape a higher carbon price – are thus especially high, as suggested by several studies (Palstev, 2001; Sinner, 2002; NZIER, 2008). The ETS provides assistance in the form of free permit allocations to reduce such exposure for sectors in which profits are expected to be significantly affected by a higher carbon price. Most notably, the agricultural sector will be provided with a free allocation pool equal to 90% of 2005 emissions when it is brought into the ETS. A similar allocation will be given to industrial producers. Starting from 2019, however, the free allocation pools for industrial producers and agriculture will decrease on a linear basis so as to phase out assistance completely in 2030. Giving free allocations to trade-exposed sectors means that an equivalent number of units will have to be bought on the international market for New Zealand to meet its Kyoto obligation. Even though the cost of these units will fall on the domestic economy through general taxation, this is likely to be a relatively efficient outcome, because there are cheaper emissions reductions abroad than in energy-intensive, trade-exposed sectors in New Zealand. This is unlikely to be the case when free allocations start being phased out in 2019, however. After this date, the only remaining ETS feature to limit the carbon price that emitters would bear is the link with international markets.

Indeed, from the beginning, NZUs will be "backed up" by Kyoto units to enable linkage with international Kyoto Protocol flexibility mechanisms (Clean Development Mechanism, Joint Implementation and Assigned Amount units). The price of these international units will act as a backstop on the price of domestic emissions. If reducing domestic emissions costs more than it does abroad, New Zealand emitters will be able to purchase units abroad and substitute foreign emissions reduction for domestic cuts. This feature of the ETS means that the cap is not an absolute cap on domestic emissions as companies will be free to purchase and sell units internationally. In theory, linking the New Zealand carbon market with the international carbon market is ideal, because it creates incentives to achieve emissions reductions where they are least costly, whether domestically or abroad. It reduces carbon price uncertainty relative to an ETS with no such international linkage.

Still, a great deal of uncertainty remains. In the event that international emissions reductions are cheaper than domestic reductions, a likely outcome given New Zealand's special emissions profile, the price of carbon in New Zealand would be shaped primarily by foreign political and regulatory factors, from changes in European governments' policies to the evolution of international climate-related institutions. Volatility is likely, and the future price path – subject to fluctuations in an immature and fragmented market – is difficult to predict. The price of international permits does not reflect any single "right" price for carbon, and there is significant potential for misallocation of resources if firms base their long-term decisions on short-term price signals that bear only a tenuous relation to the marginal benefit of emissions reduction. Realigning the New Zealand economy to reflect an arbitrary and potentially short-lived carbon price would not constitute an efficient use of resources. An unpredictable and potentially volatile price of carbon undermines

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incentives for investment in directly exposed sectors, such as agriculture, but also in indirectly exposed sectors, negatively affecting the potential for future economic growth.

Reducing risks

To provide more certainty, potential price volatility could be limited through the use of a safety valve that would automatically cap the carbon price if it reaches a certain level. The interchangeability of NZUs and Kyoto units already provides a sort of safety valve, because it prevents the price of domestic emissions from rising above the international price. The question is whether the government should attempt to anchor investors' expectations more solidly by putting in place a domestic price cap. To be effective, this measure would require an explicit, up-front guarantee by the government to provide as many permits as demanded by the market if NZUs reach a predetermined price. As long as the price remains below the safety level, the quantity cap would be binding. When it reaches the cap, however, the safety price would become binding, and the quantity of domestic emissions would rise above the cap.

The main disadvantage of a safety valve is the possibility of breaching the domestic emissions target if the price of emissions reduction becomes too high. In this case, if it is to respect its Kyoto commitment, the government would need to purchase international certificates to make up the difference, effectively transferring risks from scheme participants to taxpayers (because of the fiscal costs of buying international units at a price greater than the safety-valve price). The trade-off is therefore between guaranteeing a certain quantity of domestic emissions reductions and putting all the risks on emitters, or potentially giving up the domestic target and sharing risks between emitters and taxpayers. Given the importance of price certainty for investment planning and for the emissions-intensive sectors that are vital for continued economic growth, and given that New Zealand is already far ahead of most other countries in actually implementing policies to raise the price of carbon, the possibility of exceeding the domestic emissions cap some years in the future at some fiscal cost would seem like a reasonable risk to take in exchange for providing more certainty to industry and consequently incurring lower economic costs now.

There are other disadvantages to a safety valve, however. For this mechanism to work well, New Zealand would have to restrict the bilateral link between its ETS and Kyoto flexibility mechanisms. A domestic price cap can only work in a situation where New Zealand can buy permits from abroad but does not allow other countries to buy its permits (unilateral linkage). For the same reason, a safety valve would limit the potential for future bilateral linkages between the New Zealand ETS and those of other countries, such as Australia. International linkages are especially desirable for New Zealand because its small carbon market and the limited number of participants in it are likely to constrain liquidity. The potential for a direct bilateral agreement between New Zealand and another country or region prior to 2012 is limited, but should improve thereafter as negotiations and targets for the second Kyoto commitment period advance.

Instead of a safety valve, the New Zealand government could prevent the domestic carbon price from rising too much by adopting less stringent emission reduction targets and/or by making these targets contingent on the progress of other countries in implementing climate-mitigation policies. For example, targets could be made contingent on export-competing countries implementing emissions trading schemes similar to New Zealand's. They could even be made contingent on the potential for new carbon markets to link with New Zealand's to make sure that emission reductions are achieved at least cost. Measures of

this type could help prevent New Zealand from being exposed to a very high international carbon price before all of its trading partners are also exposed. An administrative tool for monitoring other countries' progress and adjusting domestic policy is already legislated in the form of five-yearly ETS reviews. According to the ETS legislation, these must consider "... the relative climate change obligations and emissions policies of New Zealand's trade competitors and trading partners". The rationale behind contingent targets and domestic policy adjustments is straightforward: the optimal level of emissions reductions cannot be known with any certainty, so the emissions target can and should be adjusted as new information and better analysis comes to light. Absorbing large economic costs now to avoid going over an arbitrary level of emissions is not desirable. Integrated climate-change and economic analysis shows that optimal climate-change policy is characterised by a low and eventually rising carbon price, but not by an absolute emissions cap (Nordhaus, 2008). An ETS that gives some assurance that the current and future carbon price can be borne by emitters without excessive economic disruption, and with an emissions reduction target that adjusts as other countries' climate policies evolve, respects these principles.

Political-economy considerations will factor into whether the ETS survives as currently legislated. While New Zealanders are undoubtedly worried about climate change, they are also justifiably concerned about their own economic well-being. No nation has demonstrated willingness to address climate change at a very high economic cost. International experience shows that a policy threatening to impose heavy economic costs will in any case not be politically sustainable. Partly in response to competitiveness concerns from several sectors, following the general election of November 2008 the incoming government formed a Select Committee of members of Parliament to review the New Zealand ETS legislation as well as wider climate change policy. This Committee is expected to make recommendations for amending the ETS by September 2009. Measures that guarantee that the cost to New Zealanders of achieving their environmental objectives will not get out of hand, possibly for reasons out of their control, would greatly improve the political prospects for the ETS.

Promote coherent policies to mitigate climate change

Once all sectors have been brought into the ETS, there are a number of regulatory programmes aimed at reducing carbon emissions that may become redundant – probably even distortive – and that could unnecessarily raise the economic cost of achieving emissions-reduction objectives. Insofar as a credible price is put on carbon, the correct incentives for abatement should diffuse through the economy to producers and consumers, whose decisions should then reflect the costs of this environmental externality. In the best of cases, additional policy instruments to reduce carbon emissions would give rise to unnecessary administrative costs. In the worst of cases, they would prevent equalisation of marginal abatement costs between emitters, leading to an inefficient allocation of resources. Some examples which have already been repealed since the ETS was legislated include the ban on new thermal electricity generation and the biofuels sales obligation (0.5% of total fuel sold in 2008 rising to 2.5% in 2012). Other measures, still in place, include the Afforestation Grant Scheme (government grants to plant new forests on previously unforested land), and the plethora of programmes and targets for energy efficiency announced as part of the Energywise Homes and Energywise Business components of the New Zealand Energy Efficiency and Conservation Strategy, including for example average fuel efficiency standards for new and used vehicles entering the fleet. With an appropriate carbon price, such policies can be justified only on the basis

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of market imperfections or environmental externalities not directly addressed by a carbon price (such as local pollution). These supplementary policies and objectives should all be evaluated individually and kept only if rationalised by such exceptions. Furthermore, any benefits of these programmes would have to be large enough to justify their often high implicit carbon-abatement costs. The government should reconsider the remaining GHG-abatement measures as part of its ETS and climate change policy review.

Review regional resource use plans and the Resource Management Act

Agriculture is a key industry for New Zealand, and water is a key input into agriculture, but there are signs that water use is approaching its limits in certain parts of the country. In some areas, there is a quantity problem as hydro-electric production and farming compete for its use. In other areas, there is a quality problem, as nutrient flows from intensive agriculture pollute ground water. In some cases, even if water quality is still good now, scientists know that it will deteriorate for the next 25 years (*e.g.* Lake Taupo), as nutrients from fertilisers and animals take a long time to go from soil to underground water to streams and lakes. Both problems are relatively new, however, so there is often no mechanism in place to allocate water to competing uses or to control pollution. Instead, New Zealand has a system of water consents under its Resource Management Act (RMA). In turn, water use is managed by 12 regional councils, 4 unitary authorities and the Chatham Islands Council, each responsible to develop its own resource use plan, though it must be consistent with the RMA. Passed in 1991, the RMA sought to pull together all planning/regulatory issues related to approving new projects, while eliminating jurisdictional overlap. Its fundamental principles – consultation and public participation by interested and affected parties – are still sound, but it has taken quite a long time for the national and local governments to come to grips with how to use it. The support and guidance that the national government was supposed to provide to regional councils is only now just starting to materialise.

The RMA and the water consents themselves are a critical legal infrastructure underpinning farming.[21] Consents enable farmers to extract specified quantities of water for agricultural purposes (defined by maximum flow rates and by maximum volume flows over time), generally for 30 years, with possible renewal. Extracting water without a consent is illegal. Water rights, under the RMA, are attached to properties; thus when a farm is sold, its water rights are sold along with it. These consents may enable farmers to change the nature of production on their land (*e.g.* from sheep grazing to arable or to dairying), but the water rights are usually not tradable, nor can the water itself generally be sold. Technically, the RMA does allow water consents to be transferred (including sold) separately from properties, but only if regional plans allow it, and whether to allow it or not is up to each regional council. Most have not introduced the required provisions yet, mainly because water scarcity is a relatively new phenomenon. As a result, at present consents mostly reflect first-come, first-served (or "first-applied, first-granted") rights to water for local land-owners. If a farm does not use all its entitlement in a certain period, that water is usually "lost" to the consented properties. No other property can make use of the lost water by diverting it for its own use. This system means that, broadly speaking, there are no market prices for agricultural water in New Zealand. Evidence on the implicit price farmers place on water consents (through farm sale prices and valuations) in a drought-prone region (the Mackenzie District) over a period of 19 years shows that farmers are willing to pay a premium for land that has a water consent (Grimes and Aitken, 2008). This

evidence also shows that the value of consents varies according to the underlying characteristics of the property (*e.g.* rainfall, slope, drainage, location) that influence the marginal productivity of the consented water, as theory would suggest. Differing average implicit prices for water rights across properties with varying characteristics suggest that the absence of mechanisms to trade water independently of properties results in allocative inefficiency for this resource. Thus, introducing provisions in regional water plans to allow water trading appears warranted from both economic-efficiency and environmental-effectiveness standpoints. Given the high value of water to the economy – a Ministry of Agriculture and Forestry (2004) study calculated that the contribution of irrigation water to GDP was NZD 920 million in 2002/03, or approximately 0.7% of GDP – better allocation of water through market mechanisms has the potential to increase agricultural and hence overall productivity significantly.

Markets could also prove helpful in improving water quality. The rapid growth of dairying has led to an intensification of water-quality problems in many catchment areas. These problems are more than environmental in nature. Deterioration in the clarity of popular lakes, for example because of algae bloom due to agricultural runoffs, can negatively affect tourism, an important economic activity for many regions. The problem is immensely compounded by two facts: the first is that, as mentioned above, it can take as many as 30-40 years for nutrients used in agriculture to reach underground water and lakes, so the mechanisms put in place must be very long-lived. The second is that nutrient runoffs cannot be measured directly; they must be estimated using complicated models tailored to the specificities (*e.g.* local geography) of particular catchment areas. Once these models are in place and accepted by the concerned parties, the total flow of different types of nutrients allowed in the catchment area can be capped and trading markets for pollutants can be established.[22] Again, regional resource use plans must allow nutrient trading to occur. To this end, councils are slowly making the transition to consenting of farming emissions. But the critical issue is getting the starting point right, that is, determining the flows of nutrients that should be allowed, which requires a careful balance of environmental and commercial objectives, and presents significant practical challenges – not the least of which is getting the science behind nutrient-flow models accepted by farmers.[23] Without a good starting point, trading is of limited value. Because not all councils can be expected to have access to the scientific knowledge and resources required to choose the right point along this delicate trade-off, the national government has a role in filling information gaps and in giving guidance to regional councils to ensure consistent policy across the land.

Besides updating regional resource use plans to take full advantage of RMA provisions that allow trading markets for water quantity and quality, the Act itself should be reviewed to ensure that it does not create legal opportunities for unscrupulous farmers or other business owners to use environmental concerns as a tool to restrict competition. Indeed, it appears that the RMA is increasingly being used as an anti-competitive tool by vested interests, and that the problem has become serious enough to feature among possible explanations for low productivity. To take just one example, a supermarket chain has not been able to open a store in Takapuna that was completed in 2005 because it has been entangled in one legal challenge after another by another supermarket apparently unwilling to face competition in the area.[24] In seeking to amend the Act to restrict anti-competitive uses, the crucial trade-off is between participation and speed, that is, between allowing affected parties to launch legal contests under the Act, and ensuring speedy

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approval of important projects. Right now, the pendulum may have swung too far in the direction of participation: the RMA process seems to be mainly driven by courts, making it long, uncertain and costly. The overarching policy goal should thus be to reduce the time and cost associated with the RMA approval process, enabling participation once, but not repeatedly, to provide more certainty to potential investors and in particular to facilitate infrastructure investments. One way could be to reduce the scope for competitors to object on competition grounds, often thinly veiled as environmental objections. Another way could be to require "security of costs" in order to lodge appeals to regional-council RMA decisions, as currently pressure groups are able to form incorporated societies without assets in order to avoid meeting the costs of appealing. Yet another way would be limiting appeals of regional-council decisions to points of law, as is currently the case for Environmental Court decisions. The new government has formed a RMA Technical Advisory Group to assist in the drafting of a reform bill.

Conclusion and policy recommendations

The NZ economy is widely known in international policy circles for the very significant structural policy reforms introduced in the 1980s and 1990s. Over a period of several years, successive governments reformed the country's institutional environment by injecting heavy doses of deregulation and opening the economy to the rest of the world. These reforms had a positive impact: they made the economy more open, flexible and dynamic, and these characteristics have likely prevented greater slippage in living standards relative to other OECD countries. Yet New Zealand is also often cited as a country for which free-market reforms have not yielded the improvements in productivity, economic growth and living standards that were promised by the reformers, at least not by the magnitude that would have been expected from such an important reform programme. Part of the explanation is that in some areas, the progress achieved earlier has eroded in recent years and the focus on productivity growth has been lost. Notably, a large amount of new regulation, not always well designed and driven by a variety of different objectives, has been introduced over the past decade or so. The regulatory policy-making process should be re-centred around the objective of boosting long-term productivity growth. Concurrently, further progress could be made in several policy areas to help New Zealand overcome its small size and remoteness and make its business environment as attractive as possible. Box 2.1 summarises the policy recommendations that could form the core of a productivity/prosperity drive in each of these areas.

Box 2.1. **Recommendations for structural policy to overcome geographic disadvantages and raise prosperity**

Enhance international economic integration

- Facilitate maritime trade by emulating leading OECD countries such as Denmark, France and Finland. Cut the number of documents required to engage in trade and the number of days required to clear customs, and implement a single electronic window for the different permits and authorisations with the goal of reducing inbound and outbound shipping costs to eliminate the gap of some 25% with the leaders.
- Consider reducing local-government ownership of port assets to help bring more market discipline to the sector and to raise the return on assets. Monitor any reduction in competition following from consolidation through existing institutions.

Box 2.1. **Recommendations for structural policy to overcome geographic disadvantages and raise prosperity** *(cont.)*

Send positive signals to foreign investors and create a welcoming environment for foreign direct investment

- Change FDI screening requirements by transferring the onus from the investor to the government, which would have to demonstrate harm to the economy to turn down an investment proposal.
- Lower the corporate tax rate at least enough to catch up with the OECD average, and reduce gaps between the company, personal, trust and portfolio investment entity rates as fiscal conditions permit.
- Eliminate the double-taxation of trans-Tasman profits distributed to shareholders by continuing to work on an agreement with Australia on the mutual recognition of imputation and franking credits in the two countries' tax regimes for foreign investment.

Improve public-sector and tax-system efficiency

- Improve the overall efficiency of the public sector by curbing growth in public expenditures and by subjecting existing and new programmes to a cost-benefit test that cuts across government sectors and takes into account the distortionary costs of raising tax revenue. Reduce the latter by shifting the tax mix toward more efficient taxes, such as the GST.
- Limit government ownership and spending to core sectors where it has an unambiguous economic role to play. Divest government assets in other sectors, or at least allow more private-sector competition to bring market discipline to state-owned enterprises.

Upgrade infrastructure

- Make better use of existing road infrastructure by using toll and congestion charges, and ease bottlenecks with new infrastructure, particularly in and around Auckland. Make sure projects and any additions pass a rigorous cost-benefit test.
- Improve incentives for private investments in electricity generation and transmission by removing soft price caps, encouraging the creation of financial markets for hedging energy-price and locational-basis risks, and providing a clear and stable regulatory framework that takes into account dynamic competition effects. Improve the demand-side response to electricity-market conditions by encouraging greater use of metering and time-of-day electricity charges.

Foster an environment conducive to innovation and foreign technology transfers

- Improve the linkages between public research institutions and private-sector development and commercialisation activities by tying public R&D funding to private-sector funding, and explore other ways to spur greater public-private interaction, for example through personnel exchanges. Review incentives for business R&D and the co-ordination of different R&D-support programmes to make sure they work in concert.
- Expand foreign-credentials recognition to a larger number of countries and aim to educate and retain a greater number of foreign students in New Zealand after graduation by facilitating their acquisition of residency.

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Box 2.1. **Recommendations for structural policy to overcome geographic disadvantages and raise prosperity** *(cont.)*

Amend the Emissions Trading Scheme

- To reduce New Zealand's economic exposure to greenhouse gas abatement and provide more certainty to potential investors, consider amending the ETS legislation to either put a safety valve on the price of domestic carbon emission units or make New Zealand emission reduction targets contingent on the evolution of climate change policy in other countries.
- Individually re-evaluate energy-efficiency and conservation programmes aimed at reducing carbon emissions, which may become redundant once an ETS is fully phased-in. Prominent examples include the Afforestation Grant Scheme and vehicle fuel-economy standards.

Modernise regional resource use plans and the Resource Management Act

- Implement RMA provisions in regional resource use plans to allow trading of water consents, and provide guidance and resources to regional councils on establishing targets for nutrient flows in their respective catchment areas that balance environmental quality, economic, social and cultural objectives.
- Reduce anti-competitive use of the RMA by vested interests, as well as the time and costs associated with the RMA approval process, to provide more certainty to potential investors and facilitate infrastructure investments. Consider reducing the scope for competitors to object on competition grounds, requiring "security of costs" in order to lodge an RMA objection, and limiting appeals to points of law.

Notes

1. Per capita GDP is the most commonly used measure of the standard of living. It measures value-added in New Zealand. However, servicing the country's unusually large stock of net foreign liabilities (93% of GDP at end-2008) means that the actual income per head available to New Zealand residents lags several percentage points further behind the OECD average than the per capita GDP measure suggests.
2. The excluded OECD member countries are the Slovak Republic, Hungary, the Czech Republic and Poland.
3. See OECD (2008a) for an overview of the different methods and challenges associated with productivity decompositions. For instance, the OECD Productivity Database uses the concept of "capital services per hour worked" to measure capital deepening, which is not directly comparable to either capital stock or investment.
4. The robustness of these results was checked by resorting to the PPPs for gross fixed capital formation rather than for GDP for the most recent year (2005). New Zealand's relative price for investment is higher than in Australia or the United States. Thus, the figure cited in the text would be even lower with the alternative measure.
5. The study estimates gravity equations for the flows of FDI from eight home countries (France, Germany, Italy, United Kingdom, Japan, South Korea, United States and Canada) to 32 host countries (including OECD and non-OECD members, among which New Zealand).
6. Exports of goods and services make up more than 30% of New Zealand's GDP.
7. According to empirical estimates, raising transport costs by 10% reduces the volume of trade by more than 20%, and poor infrastructure accounts for more than 40% of predicted transport costs (Limao and Venables, 2001). Similarly, improving port efficiency from the 25th to the 75th percentile reduces shipping costs by 12% and increases bilateral trade by anywhere between 5% and 25% (Clark *et al.*, 2004; Blonigen and Wilson, 2008).

8. A recent study of 126 economies calculates the loss from export delays at around 1% of trade for each extra day. For perishable agricultural products, the cost is nearly 3% of the volume of trade for each day of delay (Djankov, Freund and Pham, forthcoming). Another study finds that each extra signature an exporter has to collect reduces trade by 4.2% (Sadikov, 2007). For high-end exports the reduction is nearly 5%.
9. They are particularly high in three sectors: telecoms, transportation and electricity. Restrictions are high in telecoms partly because of foreign equity ownership limits in Telecom New Zealand. In air transport, there is a 50% foreign ownership limit as well as partial state ownership of the principal carrier. Public ownership of rail assets makes the barrier to both domestic and foreign entry in this sector very high. And in the electricity sector, the presence of three state-owned enterprises among the five largest electricity generators and the high degree of vertical integration in the sector limit competition and foreign investment opportunities.
10. "Sensitive land" was an existing OIO term and refers to land specifically listed in the Overseas Investment Act. Examples of sensitive land include: land which is non-urban (and exceeding five hectares), land subject to a heritage order and land adjoining the foreshore.
11. Rail freight transport is basically uneconomic in New Zealand because demand tends to be for small loads over short distances, and the rail charges needed to make a profit with such a use pattern cannot match trucking costs.
12. See Robson (2007) for a non-exhaustive survey with a particular focus on New Zealand.
13. One reason why capital markets are comparatively thin in New Zealand is that it is hard for fund managers to achieve diversification. The number of publicly traded companies is small, so investors go overseas and hedge in derivative and currency markets. These latter markets are relatively deep and liquid for their size, but not so the capital markets.
14. There are good reasons not to lump social security and payroll taxes together with income and profit taxes. The former tend to be more efficient because of their more direct link to transfer and insurance programmes, because they often have lower or zero marginal rates (*e.g.* non-insurable earnings) and because they do not apply to capital income.
15. At 9.9 deaths per 100 000 people, New Zealand's road toll is higher than countries such as the United Kingdom, Sweden and the Netherlands, which have fatality rates below six per 100 000 people. Also, in one government study the cost of congestion in the Auckland area was estimated at NZD 900 million per year (Ministry of Transport, 2006).
16. Whirinaki supplies electricity to the wholesale market whenever prices reach NZD 1 000/MWh, or NZD 200/MWh for four consecutive hours.
17. In this regard, the efforts made by the previous government to enhance the quality and labour-market relevance of tertiary studies through the Tertiary Education Strategy for 2007-12 are welcome. The crucial change concerns the shift away from a system in which funding was based on student intake to one based on labour-market outcomes.
18. This estimate is based on a carbon price of EUR 10 per tonne (approximately NZD 25).
19. In forestry, it will be the landowners (or forestry rights holders). For liquid fossil fuels and transport, it will be the fuel suppliers, although domestic aviation may opt in and take on obligations. For stationary energy, it will be the coal, gas and geothermal suppliers, although again large users may opt in and take on obligations. For industrial processes, it will be the end emitter. In agriculture, it will be the suppliers of nitrogen fertilisers and the meat/dairy processors. And for waste, it will be the landfill operators.
20. Primary industries (agriculture, horticulture, forestry, mining and fishing) account for about 7% of GDP and over 50% of total export earnings.
21. This description draws on Grimes and Aitken (2008).
22. See Lock and Kerr (2007) for a discussion of how such a market could be designed for Lake Rotorua.
23. There are areas now where farmers are trying to establish markets based on consensus, but this is very challenging, given the number of participants that can be involved in the negotiations. In one area where such a market is being considered, there are more than 3 000 properties. Legal challenges to some trading projects have been before the courts for a long time.
24. The established supermarket has used zoning provisions under the Act to argue that the local road network would not be able to support traffic going to the new supermarket.

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ANNEX 2.A1

Progress in structural reforms

This Annex reviews actions taken on recommendations from previous *Surveys*. Recommendations that are new in this *Survey* are listed at the end of the relevant chapter.

Recommendations	Action taken since previous *Survey* (April 2007)
Labour markets and social programmes	
Introduce a trial period for marginal groups of workers, during which the law for unjustified dismissal does not apply. Loosen restrictions on fixed-term contracts, especially for older workers.	The new government passed an amendment to the Employment Relations Act introducing a trial employment period of 90 days for new employees in businesses with fewer than 20 staff.
Provide greater encouragement and assistance to beneficiaries to shift from public income support back into paid work. Make the benefit system less passive by strengthening activation policies. Broaden and enforce the work test.	The government implemented a package of reforms, including: new employment services; employment and training assistance; and enhanced services for Maori and young unemployment beneficiaries. The new government has committed to broadening the work test to some sole-parent, sickness and invalidity beneficiaries and to enforcing work obligations for the long-term unemployed.
Education	
Implement a nation-wide school assessment and publish indicators. Invest additional resources in research and development on effective teaching and learning strategies in schools and diffuse best practices across classrooms.	The new government has committed to introducing national standards in reading, writing and numeracy, and to requiring primary schools to assess students against these standards and 1) report progress to parents; and 2) report each year on the whole school's performance.
Reduce wasted expenditure in the tertiary sector by vigorously pruning low-priority and low-quality courses.	A new funding system has been in place since 2008 that links funding to national priorities through negotiated investment plans. Plans are monitored for quality. Work is underway on a new quality-assurance and monitoring system, which will use self assessments and external evaluations/reviews to focus on outcomes.
Further reduce the cost and expand availability of high-quality childcare and out-of-school-hours care. Ensure that the 20 hours free early childhood education (ECE) is provided to all 3 and 4 year-olds in the most cost-effective way.	As at October 2008, 93% of those enrolled in eligible services were receiving free ECE. Subsidies for income-tested childcare, available for both early childhood and out-of-school care, were increased in 2008.
Increase the supply of teachers through merit-based pay and/or by differentiating pay to reflect shortages in certain subjects, such as science and Maori language.	In consultation with unions, the government has attempted to place performance measures in teachers' contracts, so far without success.
Product market competition	
Further improve the competition legislation framework.	There have been no legislative or regulatory changes with respect to the competition framework. A 2008 review of competition law did not identify a need for any significant shift in policy objectives or instruments.
Assess competition in the phone mobile market and ensure that call termination charges reflect costs. Investigate the reasons for low broadband uptake.	A Commerce Commission review into mobile termination access services is currently underway to determine whether the prices of these services should be regulated.
Resume the privatisation process.	No action.

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Recommendations	Action taken since previous *Survey* (April 2007)
Innovation and business creation	
Foster a closer integration of education, immigration and labour-market policies with innovation policies.	No new measures specifically targeted at closer integration.
Encourage development of the venture capital market.	Parliament passed the Limited Partnership Act 2008 into law to allow limited-liability partnerships, which are a common mode of participation in venture capital elsewhere. The government also participates jointly in some venture investments.
Taxation	
Consider a temporary exemption for foreign-source income to remove disincentives to immigration.	A new four-year exemption from taxing the foreign earnings of new migrants has been enacted.
Avoid introducing new subsidies or tax preferences and consider placing time limits on subsidies provided to the film industry.	No time limits have been placed on the tax subsidies applying to the film industry.
Reduce very high EMTRs faced by some single-income households and second-income earners.	Personal tax rate changes introduced on 1 October 2008 lowered EMTRs on some single-income households and second-income earners by 2.5 percentage points. Further personal tax rate changes on 1 April 2009 and 2010 will lower EMTRs further.
Develop a long-term strategy for the tax system, based either on a purer comprehensive income tax with a single broad income base and low tax rates, or on a dual income tax with separate bases and rates for capital and labour income.	The new government has signalled its intention to have a broad income tax base with low tax rates in its coalition agreements.
Reduce the top marginal income tax rate and align it with the trust and company rate.	The government is legislating to reduce the top personal income tax rate to 37%, with a view to harmonising it with the company and trust tax rates at 30% in the medium term.
Enhance the neutrality of corporate tax by removing the loading in the depreciation procedure and preferential treatment for certain activities and industries. Assess the relative costs and benefits of the imputation system.	The depreciation loading remains in place. The previous government issued a discussion document covering aspects of the imputation system, but did not consider replacing it.
Adopt the proposed changes to the Controlled Foreign Company (CFC) regime and pursue efforts to harmonise the tax treatment of managed funds and individual investors for offshore investments.	Changes to the CFC regime will be enacted in 2009. The "grey list country" exemption will go, except for Australia. Instead, all CFCs with an "active business" operation offshore will be exempt from tax in New Zealand.
Set up a national property tax.	No action.
Rely more on indirect consumption tax for raising revenue by increasing the GST rate.	The new Government has ruled out increasing the GST rate.
Design a consistent policy on environmental taxes that contributes to delivering environmental objectives at the minimum economic cost.	No action.
Public management	
Undertake regular and comprehensive evaluation of baseline expenditures.	The government has instructed public service chief executives to undertake a line-by-line spending review.
Increase incentives for public-sector managers to develop relevant information systems to enhance performance.	Following a review of accountability documents, changes to the documents in which appropriation and performance information is provided were made in 2008 to make this information more accessible to Ministers and members of Parliament. The auditor general has issued a draft auditing standard for consultation that, if implemented, would increase the focus on performance information and thus the incentive to develop relevant information systems.
Public pensions and retirement savings	
Evaluate paring back the projected cost of New Zealand Superannuation (NZS) by choosing an index formula that provides for benefits to increase more slowly than wages and/or by further raising the age of entitlement (*e.g.* by linking it to life expectancy).	Government policy is to maintain the current parameters of NZS. Officials are currently assessing the future sustainability and adequacy of current retirement income and related policies in response to the 2007 review by the Retirement Commissioner.
Remove the housing-related sweeteners from KiwiSaver and monitor and evaluate the impact of the one-time capital withdrawal provision on KiwiSaver take-up rates and saving behaviour more generally.	Government policy is to retain KiwiSaver's current housing-related incentives. The high-level design of the mortgage diversion facility was modified in September 2008 and its overall efficiency and effectiveness will be assessed in March 2009. The deposit subsidy and first home withdrawal schemes will not be implemented until 2010, and will be evaluated as part of the KiwiSaver Joint Evaluation Strategy (JES).

Recommendations	Action taken since previous *Survey* (April 2007)
Ensure that KiwiSaver and provisions for employer-based registered superannuation schemes do not disadvantage or crowd out retail pension plans.	The JES will assess the impact that it has had on competitive superannuation markets and the financial sector.
Keep KiwiSaver voluntary for the present time, and monitor its impact on household saving rates and the supply of domestic savings. But keep the compulsory option in mind if the voluntary route does not produce the desired effects over the medium term.	Government policy is to retain KiwiSaver as a voluntary scheme. Work in progress as part of the JES will assess what impact the scheme has had on household saving rates and the supply of domestic savings, and will assess the costs/benefits associated with a voluntary scheme relative to a compulsory one.
Ensure that financial market regulations and tax policies are consistent with government objectives to encourage the accumulation of financial assets for retirement purposes and to provide a neutral treatment between housing and financial assets.	Enhancements to KiwiSaver in 2007 may over time lead to a substantial increase in household savings held in the form of financial assets. The new Portfolio Investment Entity (PIE) regime reduces the tax disadvantage to saving in domestic and foreign entities through collective investment vehicles, including superannuation funds.
Deepening financial markets	
Examine whether there is a sufficient benchmark yield curve and consider whether increased government bond issuance may be warranted to facilitate the development of a more extensive corporate bond market.	Updates to the government's fiscal forecast have indicated a need to significantly increase debt issuance. This will increase government bonds outstanding and offer the opportunity to extend bond maturities beyond December 2017.
Assess the net impact of removing opportunities for banks and firms to avoid paying the Approved Issuer Levy on interest payments, so as to reduce the incentive to issue bonds offshore rather than domestically.	The Government is currently investigating potential changes to the Approved Issuer Levy/Non-Resident Withholding Tax regime for interest payments.
Reduce central- and local-government ownership in the business sector, so as to expose the capital in those businesses to market judgements about its most productive use.	Current government policy is not to sell businesses owned by the Crown.
Ensure that a streamlined regulatory framework that requires firms offering collective investment instruments to have an appropriate governance structure with sufficiently stringent requirements for trustees to make sure that they are capable of discharging their duties.	Plans have begun for a broad review of the Securities Act, which will investigate the effectiveness of the overall regulatory design in achieving its objectives. The review will also look at the efficiency and effectiveness of the individual regulatory tools (including the Trustee model).
Adopt a more rigorous approach to disclosure requirements for fees and expenses for collective investment instruments so as to enhance transparency and allow for easier comparability across products.	The aforementioned Securities Act review is expected to include an examination of the disclosure requirements on securities issuers. Industry bodies are also considering a consistent standard in KiwiSaver fee structures.
Continue efforts to improve financial literacy and integrate financial education into the school curriculum.	The government is working to imbed financial literacy in the New Zealand school curriculum.

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Chapter 3

Health-care reform: Challenges for the next phase

New Zealand spends less per capita on its health-care system than many OECD countries, yet as elsewhere, trends in demography, technology and costs will exert mounting and unaffordable pressures on spending over the long run. Policy-makers can manage the fiscal challenge by controlling health-care costs and putting limits on public coverage. The fiscal framework, which imposes hard budget constraints on health and other spending, provides a good foundation for cost control. However, government intervention to blunt price signals in health care systems and enormous supplier influence over patient demand mean that health care markets do not behave like other markets and there can be no guarantee that best value for money is being extracted from health budgets. While health-care reforms in the past have attempted to improve incentives for efficient health-market behaviour, over the past decade or so, large boosts to hospital wages and primary care subsidies have most likely failed to elicit commensurate gains in either the quantity or quality of output. Another concern is the sustainability of the health-care service-delivery model in the face of rising demands and looming health-care workforce shortages. As a high-immigration country, with large and poor minorities, New Zealand is striving to promote equality of health outcomes, improved access to care and more efficient management of chronic conditions, the big clinical challenge of an ageing society. Efforts are also underway to rationalise the hospital sector to assure its clinical viability. To achieve these important goals, there is still a need to improve efficiency incentives and information, clarify institutional roles, and enhance the attraction of New Zealand as a place in which to live and practise medicine.

At the macro level, New Zealand has shown relatively good performance. Indeed, efficiency was a central objective of health reforms during the 1980s and the major, "quasi-market" reforms of the 1990s. But a number of factors are putting pressure on the financial and clinical sustainability of the system. In the 2000s, a new round of reforms followed, whose stated key aims were to improve equity, quality of services and population health (Ashton, 2009). Because these objectives were deemed to require increased resource investments in the health system, and cyclical conditions were strong, public health spending grew at over double the rate of GDP and the damping effect of earlier cost-cutting reforms proved to be temporary, as was the case in many other OECD countries. Soon demographic ageing will be added to the list of pressures, but it may pale against the forces of advancing technology, public-sector cost disease and ever rising public expectations of what the health system can deliver.

Good health lies at the foundation of the quality of life and economic growth, and medical breakthroughs have produced truly spectacular gains in this domain. High cost growth partly reflects genuine quality improvements. Yet health care has its limits, whether in the share of production or taxes it can absorb or in how much it can achieve on its own. Lifestyles and environmental degradation harmful to health may warrant as much attention as allocating more money to treatment. The last dollar spent on education or other social spending may yield greater benefits to national health outcomes than the last dollar spent on health care. Moreover, lack of cost consciousness under widespread insurance and lack of information due to the special nature of the service may misallocate health-care resources and generate waste. While there is scope for efficiency gains, society also has a clear choice to make: should the supply and quality of health-care resources be improved and if so, who should finance it? Should service provision and financing be reconfigured to improve access? Health-care issues are therefore germane to both the macroeconomic and structural challenges facing New Zealand. Continuing and deepening the reform process in health care and other structural-policy areas discussed in Chapter 2 would constitute a coherent package to secure fiscal sustainability and bolster New Zealand's advantage as an investment and work location – thereby acting to redress the macroeconomic imbalances that have been a point of vulnerability in the crisis and also to close the productivity gap that continues to depress living standards.

This chapter examines health-care reform challenges as follows. The first section looks at the aggregate performance of the system in terms of its ability to get the best possible outcomes at lowest possible cost to the public. The second section describes the main drivers of health spending in the past and the need for better spending control so as to preserve long-run fiscal sustainability. The third section discusses the parallel need for a reformed health-care delivery model to assure sufficient capacity and the ability to keep up with rapidly changing technology and population needs. Lastly, the chapter identifies future directions for reform; it emphasises the need for enhanced economic incentives and better information to improve cost and quality performance, restrain patient demand and

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boost institutional accountability by funders, purchasers and providers so as to get the best value for money.

Health-system performance

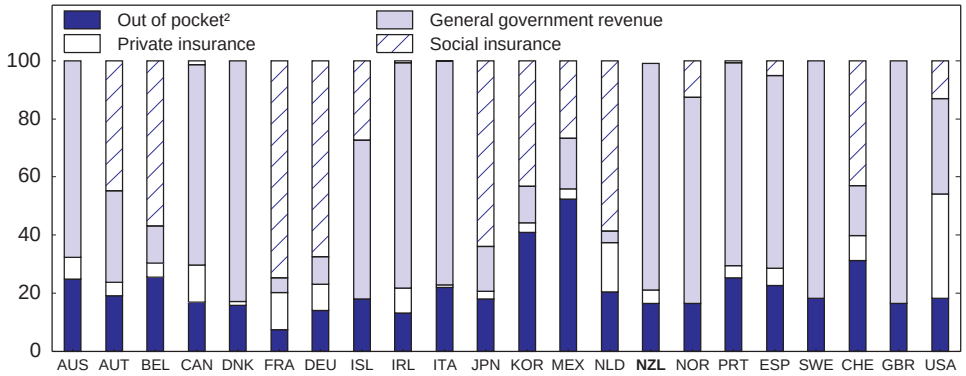
The NZ health care system performs quite well, expending somewhat fewer resources on health care per capita than the OECD average, while achieving some good population-level health outcomes along with universal public coverage. However, available productivity indicators suggest declining value for money more recently and, as elsewhere in the OECD, social inequalities in health status persist.

Overview of funding arrangements

As in most OECD countries, the bulk of health spending in New Zealand (some 80%) is from the public purse. New Zealand also belongs to the group of countries that finances public health spending mainly out of general taxation rather than social insurance (Figure 3.1). Systems based on individual premia and/or out-of-pocket payment tend to shift costs onto higher risk groups, which may be considered inequitable insofar as health status is often linked to income and sometimes to individualised insurance premia. General tax-financed health spending is likely to be more redistributive (even if that is not its principal goal), as it provides subsidies not only to the sick from the healthy through insurance risk-pooling but also (implicitly) to the poor from the rich *via* progressive taxation.

Figure 3.1. **Financing of health care in OECD countries**

As a percentage of total health expenditure, 2006[1]



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1. 2002 for Denmark, the Netherlands and the United Kingdom.
2. For some countries, sum differs from 100. Differences have been added to out of pocket data.

Source: OECD, *Health Data 2008*.

Public health spending in New Zealand thus has the character of a public service provision, which is partly outsourced to the private sector. The main hospitals are public, with smaller private hospitals focused on elective surgery. Ancillary services can be provided in public hospitals or privately. Doctors are either salaried public hospital employees (mostly specialists) or self-employed practitioners (mostly GPs), sometimes both. Out-of-pocket and private insurance payments go to private providers. Patients generally have a free choice of GP, though for publicly-funded elective care they are assigned to a specialist.[1] This arrangement most closely resembles integrated systems that

merge insurance and provision functions (*i.e.* combining on-budget financing of health care provision with publicly-owned hospital providers) in a number of OECD countries (*e.g.* the Nordics, southern European countries and Australia); such countries are able to exert a high degree of central control and achieve universal coverage, but at the cost of weak incentives to increase output, improve efficiency or maintain quality and responsiveness to patient needs (Docteur and Oxley, 2003). Countries following the public contract model (Canada, other Europe including England, and Japan) have attempted to bolster such incentives by means of public payers contracting with private providers, ideally on an *ex ante* volume and cost basis.

Public funding pays for most personal health care for the entire population, with the exception of adult dentistry, optometry and medically non-essential services such as cosmetic surgery. Private insurance can be purchased to cover such excluded services and to access elective services where there are public hospital waiting lists. Co-payments for primary care and pharmaceuticals are required for everyone except children under six and some chronic care patients, and can be covered by supplementary private insurance (as, for example, in France), though since 2002 they have been lowered due to increased government subsidies. There are no co-payments for hospital care. About one-third of the population carries private insurance, but the total amount of funding provided is minor. Countries like the United States, Switzerland, the Netherlands and Germany rely much more on private insurance (in the last two, in lieu of public coverage for certain groups), implying mixed systems with potentially more consumer choice and competition by multiple insurers for enrolees. However, in practice such systems have been plagued by weak cost control. Managed care plans have been developed featuring incentives for volume and price control by means of insurer selective contracting with competing providers and restricted consumer choice.

Public health spending is funded for the most part from the Core Crown budget under the line item Vote: Health. The government, on the advice of the Ministry of Health (MoH), divides this sum across the broad categories of public health, personal health-care services (primary, hospital and pharmaceutical) and disability services.[2] The MoH purchases maternity care and working-age disability services for the entire country, besides providing (along with the District Health Boards, DHBs) public health services. It devolves the remaining budgets to the DHBs according to demographic-based funding formulae. The DHBs, which both own and fund the public hospitals, devolve the bulk of their primary care budgets to the Primary Health Organisations (PHOs), which in turn pass it on to their GP affiliates mainly as capitation payments based on patient lists (Figure 3.2). The national pharmaceuticals purchaser (Pharmac) manages the pharmaceutical schedule, negotiates prices and sets access criteria on behalf of the DHBs. The whole health system is guided by the NZ Health and Disability Strategies, which set broad policy orientations and detailed objectives and initiatives. The DHBs must negotiate annual plans with the MoH to implement these strategies and are monitored for their performance against the plans.

The main exception to the global budget model is the Accident Compensation Corporation (ACC), which insures accident-related injuries and is partly self-funded from compulsory employer and employee social contributions and partly subsidised by the Crown to cover non-workers, while it contracts out its health services to public (for emergency hospital services) and private providers (in the main). The ACC was briefly exposed to competition in 1999, when private entry was allowed into the market for work-related accident insurance, but the change was repealed a year later. Budget control by the

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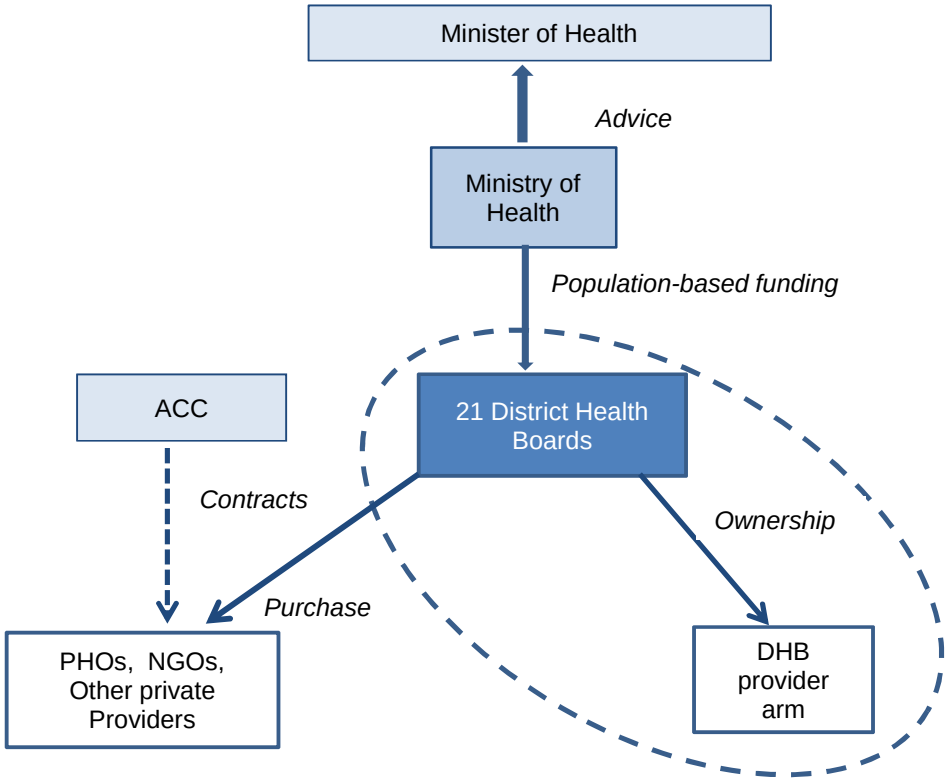
Figure 3.2. **The structure of the NZ public health system**



ACC seemed to improve under the pressure of competition, but then deteriorate as it reverted to public monopoly status (see Chapter 1). This may suggest a potential for insurer competition to stimulate cost efficiency in both ACC and the sector more broadly (see below).

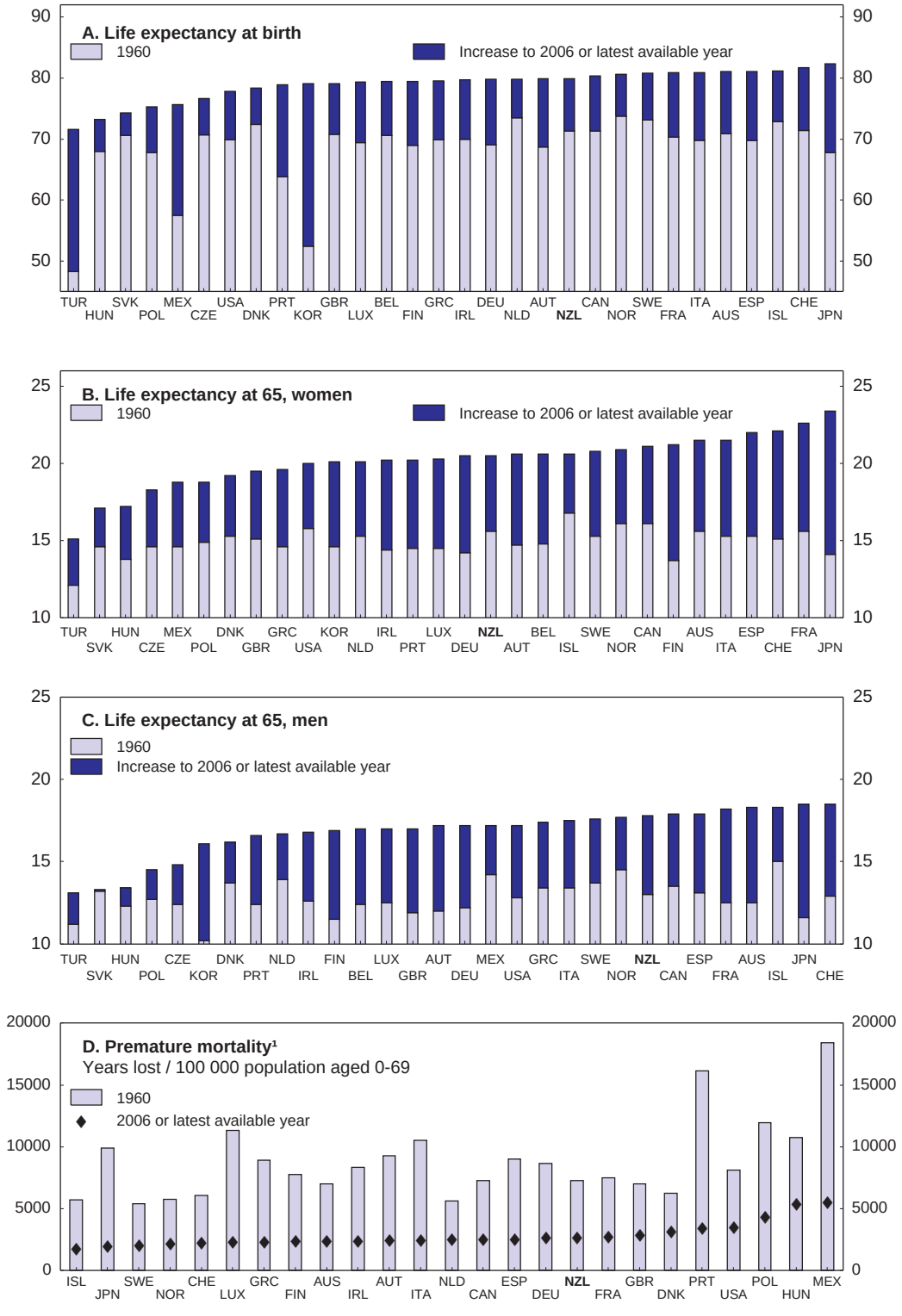
The link between spending and outcomes (system efficiency)

Health system efficiency results from achieving the best balance between different kinds of care, and the cost and technical efficiency with which inputs going into that care are used in order to achieve highest possible outputs of health care services and, ultimately, the best possible health outcomes. The simplest measure of aggregate health outcomes is life expectancy at birth, which is a weighted average of age-specific mortality rates. Because of dramatic declines in premature mortality since as recently as 1960, mainly reflecting reductions in infant mortality, along with lengthening life spans for survivors into older age, this indicator has improved markedly for nearly all OECD countries.[3] New Zealand now has the 11th highest life expectancy out of the 30 OECD member countries, though premature mortality is above the OECD median, and at age 65, NZ women have a significantly lower life expectancy ranking within the OECD than NZ men, even though as elsewhere women tend to live longer than men (Figure 3.3).

Refining the indicator to reflect quality as well as quantity of life, *i.e.* adjusting for incidence of chronic illness and disability, and mapping such "health-adjusted life years" against total per capita health spending across the OECD countries, gives a health efficiency frontier, assuming for the time being that health system spending is the only determinant of healthy life years (Figure 3.4).[4] New Zealand is found to be close to the

Figure 3.3. **Indicators of health outcomes**

Years



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1. Potential years of life lost excluding external causes (land transport accidents, falls, assaults, suicides, etc).

Source: OECD, *Health Data 2008*.

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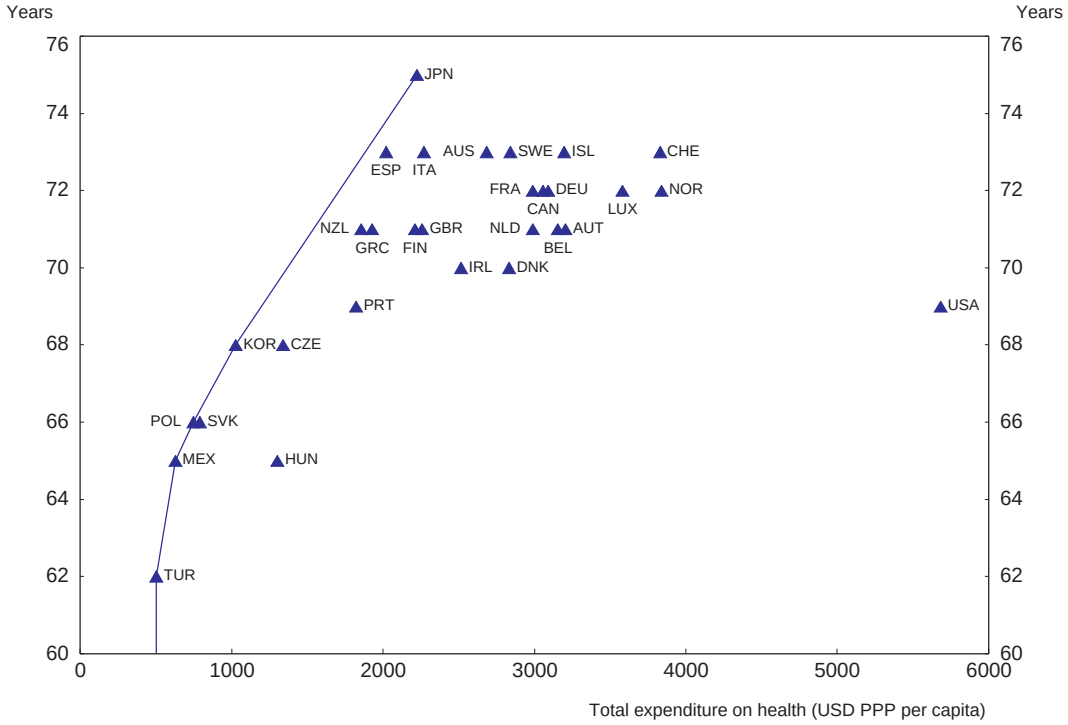
Figure 3.4. **Spending to outcome frontier, 2003**

Health-adjusted life expectancy (HALE)



StatLink http://dx.doi.org/10.1787/563063844082

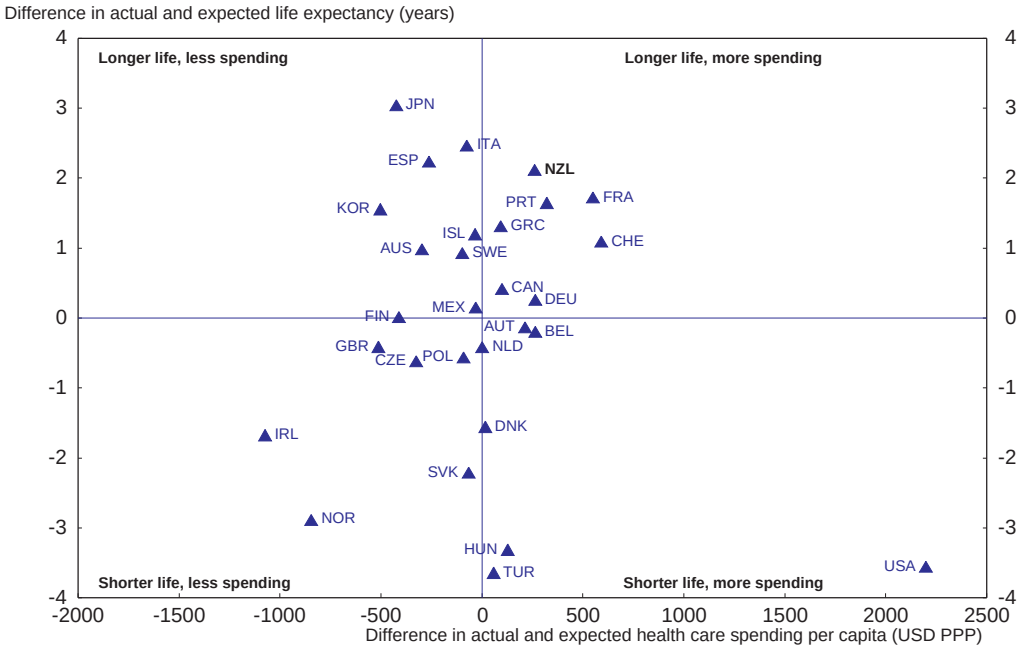
Source: World Health Organisation and OECD Health Data 2008.

efficiency frontier, in the company of countries (except Hungary) where spending and outcomes are both low, as well as Japan and southern European countries (except Portugal) enjoying high life expectancies for modest outlays. At the other, far extreme is the United States. Figure 3.5 looks at the issue by normalising the latest observations for per capita health spending and life expectancy on per capita GDP according to the respective cross-country correlation coefficients. New Zealand occupies a high point in the second-most favourable quadrant: it spends somewhat more but its residents live significantly longer than would be predicted by its standard of living alone, and only Japan, Italy and Spain (all known for their healthy diets) appear to do significantly better within this optic. However, as recently as 2003, New Zealand could be found in the efficient "longer life, less spending" (north-west) quadrant, suggesting a need for monitoring and better understanding in order to ensure that higher spending continues to be associated with better health (Ministry of Health, 2008).

To be sure, factors other than health care influence health outcomes.[5] Like health care itself, these factors are often correlated with income, though sometimes ambiguously; for instance, sedentary lifestyles are associated with rising prosperity, but so are better diet, education and environmental quality. Addictive behaviours associated with social and mental-health conditions, and sometimes policies, pose a particular burden to the health-care system. With a more refined analysis that controls for such other factors, New Zealand's relative efficiency performance seems even better, at least in 2003, the year for which the analysis was carried out, than suggested by the mappings shown above

Figure 3.5. **Difference between actual and expected health-care spending per capita and actual and expected life expectancy**[1]

2006[2]



StatLink http://dx.doi.org/10.1787/563102861488

1. Expected values for health-care spending and life expectancy are based on cross-country regressions on per capita GDP, with respective coefficient estimates of .12 and .0002.
2. 2005 for Canada, Turkey, United Kingdom and United States; 2004 for Italy and Netherlands.

Source: Ministry of Health, *Health Expenditure Trends in New Zealand*, 1996-2006; OECD Health Data 2008 and OECD *National Accounts Database*.

(Joumard *et al.*, 2008).[6] This does not mean that there is no room for improvement, however.

Inputs and outputs (the production technology)

Health-care inputs and outputs can provide further insights into the system's production technology and performance. New Zealand seems to do well in terms of the most commonly used indicators. In the hospital sector, the reduction of bed utilisation was a main success of the 1980s and 1990s reforms and a key factor in controlling costs in New Zealand, as in many other OECD countries (Table 3.1). A partly compensating rise in the intensity of hospital care, as measured by case-weighted discharges or throughput,[7] has largely reflected a rising number of day patients made possible by new technologies such as endoscopies (non-invasive surgery), implying productivity gains. New Zealand is well ahead of Australia and the UK National Health Service[8] in reducing hospital bed utilisation, and spending on inpatient care appears to have fallen faster than in most other OECD countries, particularly during the decade of the 1980s (Docteur and Oxley, 2003, Table 12). Nevertheless, results from a large health maintenance organisation based in California (Kaiser Permanente) suggest that hospital spending could be cut further, perhaps dramatically, by greater use of community services (Table 3.1). Large differences across DHBs within New Zealand also suggest that low-utilisation benchmarks could be

Table 3.1. **Indicators of resource use in the health-care sector**

2006 or latest available year

	New Zealand	Australia	United Kingdom	United States	Iceland	Norway
Physicians per 1 000 population	**3.0**	3.3	n.a.	3.1	6.1	n.a.
of which: GPs	**0.8**	1.4	0.7	1.0	0.7	0.8
Nurses per 1 000 population	**10.0**	9.7	11.9	10.5	13.7	31.6
Hospital beds per 1 000 population	**2.0**[1]	3.9	3.6	3.2	n.a.	3.6
Hospital discharges per 1 000 population[1]	**157**	341	200	69[2]	n.a.	n.a.
Average length of stay, hospitals	**6.9**	17.2	8.7	6.4	n.a.	7.7
Medical consultations per person per year	**3.2**	6.1	5.1	4.0	6.3	n.a.
Doctors' compensation[3]						
GPs	**n.a.**	2.5	5.4	4.4	3.0	n.a.
Specialists	**3.6**	5.2	n.a.	6.5	2.9	1.5
MRI units per million population	**3.7**	4.9	5.6	26.5	19.7	n.a.
Computer tomography units per million population	**12.1**	51.1	7.6	33.9	26.3	n.a.

1. Source: Malcolm (2007), which may not be fully comparable with OECD data.
2. *Ibid.*, results for Kaiser Permanente, a large managed care organisation in California.
3. Self-employed, except for New Zealand where salaried; annual income as a share of per capita GDP.

Source: OECD Health Data 2008 and Malcolm (2007).

established to which high-utilisation public hospitals could aspire, providing substantial scope for efficiency gains (Malcolm, 2007).

More direct measures of hospital productivity and efficiency have been developed, though these are fraught with difficulties, especially regarding the elusive quality dimension. New Zealand has developed many performance and some quality metrics (Box 3.1), though they are rarely used very assertively to monitor performance or linked to

Box 3.1. **Measuring productivity, efficiency and quality of health services**

A critical issue in New Zealand is developing measures of productivity (outputs per input), efficiency (costs per output) and quality (various proxies) in the health sector in order to assess the impact of reforms, monitor provider performance and potentially link funding to performance (output-based funding). This constitutes an integral part of the government's pursuit of greater value for money because of rising health-care expenditures and the public's increasing expectations of health services. Major measurement challenges concern:

- inputs as defined by full-time equivalents (FTE) of nursing and physician staff, which are not standardised across time and hospitals because of the need to properly weight the different classes of nurses and doctors, with costs representing corresponding weighted averages of such staff's wages;
- outputs of outpatient (including emergency-room) services, which must be valued by rough price estimates used to settle accounts between hospitals where data are highly inconsistent and observations often missing (whereas inpatient services are relatively straightforward to value in terms of diagnosis-related groups, using case-weighted discharges);
- sector coverage, which has been restricted to public hospitals by NZ studies to date, whereas England, for example, has developed performance measures also for primary care in the context of the Quality and Outcomes Framework in the 2004 GP contract with the NHS;

Box 3.1. **Measuring productivity, efficiency and quality of health services** *(cont.)*

- quality improvements (changes in medical treatment, technology and modes of service delivery), which can lead to improved health outcomes that are not reflected in outputs, require that productivity measures be adjusted for various measures of quality, e.g.: i) mortality within 30 days of hospital admission, ii) health effects of treatment and waiting times, *iii*) value weight for statin use, iv) blood-pressure control, *v*) heart-attack survival, *vi*) patient experience and *vi*) the value of health; items *i*) to *v*) are based on increases in quality-adjusted years of life (QALYs) and *vi*) on additional years of employment.

According to the Treasury (2007), which conducted its study in 2005, hospital efficiency fell by 2.6% per annum over the three years 2000-01 to 2003-04 (June years). Over half of the increase in staff costs went into increased wage costs per doctor, the other half into increased doctor numbers, which however did not result in a corresponding increase in output. By contrast, hospital efficiency had increased by 1.1% per annum over the previous three years 1997-98 to 2000-01. Treasury acknowledged that further work is needed, *i.e.* to construct output measures for other hospital and non-hospital services (notably outpatient services), develop robust input data and cost deflators for key staff groups and clinical supplies, and in the longer term build quality into output and productivity constructs.

The Ministry of Health (2008a) improved on the Treasury methodology by including outpatient in addition to inpatient services and refining FTEs. It found that hospital productivity itself declined from 2001-02 to 2005-06 although it increased in 2006-07, indicating perhaps an efficient shift from inpatient to cheaper outpatient care made possible by new technologies (bronchoscopies, colonoscopies, etc.). Costs per output increased markedly over the entire six-year period, well above the rates of increase in both the CPI and DHB revenues, explained largely by significant wage settlements during this period. As a result, efficiency fell, especially in the latter part of the period, both corroborating and extending the Treasury results. However, the quality of hospital care improved as measured by rates of in-hospital mortality and hospital-acquired infections; adjusting for such effects implies a more moderate reduction in efficiency. If there are inter-DHB variations in trend productivity and cost efficiency, they may relate in part to staff mix, where greater use of senior doctors and registered nurses leads to higher output. This implies potentially substantial savings to be realised from benchmarking to the most efficient provider, though allowance has to be made for diseconomies of small scale and other local circumstances.

Academic studies have also looked at performance impacts of the long history of structural reforms in New Zealand. The most comprehensive is Davis *et al.* (2005), which assesses the impact on patterns of care, output and patient outcomes of a substantial reduction in bed availability and multiple reorganisations in the NZ public hospital system between 1988 and 2001. The authors find that despite substantial bed reductions and other structural changes during the period of experimentation with market reforms during the 1990s, hospitals maintained, and even increased throughput by means of compensatory mechanisms such as workload adjustments, whereas patient access, particularly for vulnerable groups, did not suffer. This suggests that national public hospital systems can maintain high levels of performance and patient responsiveness while undergoing drastic organisational change. On the other hand, apart from discharge numbers, the final reform phase (2000-01) showed a sharp reduction in the impact of reform – an increase in beds available, no decline in average length of stay, and an increase in the rate of unplanned admissions. This would tend to corroborate the government's own findings of declining public hospital efficiency under the DHB reforms.

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resource use. The main implication of this work is that hospital labour productivity declined in the aftermath of the DHB reforms (as government reduced its focus on performance and allowed providers to take on staff, etc.), but there are signs of improvements more recently, perhaps as the transition phase is ending. Nevertheless, hospital cost efficiency has persistently declined, reflecting large wage awards under centralised wage bargaining that have not been compensated by the modest recent rise in productivity.

Physician and nurse "density" of supply seems in line with comparator countries. The rate of medical consultations is nevertheless low, making it appear that doctors are perhaps underemployed, but this may be partly explained by a smaller proportion of GPs in the overall doctor numbers than, for example, in Australia, which has almost double the GP and consultation rates.[9] Data on doctors' wages are generally unavailable, except for salaried specialists in public hospitals, where they do not appear to be extreme, despite recent rapid growth. The use of expensive high-tech equipment, a major spending drain in OECD health systems but also sometimes a sign of innovation and insurer competition, remains quite low in New Zealand. Pharmaceuticals expenditure per capita is relatively moderate, partly because of reduced unit prices negotiated by Pharmac.

Although some of the above indicators of resource use may support a positive assessment of health-sector cost efficiency in comparison with other OECD countries, the recent trend within New Zealand itself is less encouraging. Furthermore, there remains the question of whether the quality of output is adequate – higher cost efficiency coming at the expense of quality would be clearly unacceptable. International indicators of survival rates for major illnesses give a mixed picture for New Zealand's quality of acute-care services, though its negative rankings seem to outweigh the positive ones (Table 3.2). Hospital errors (medical misadventure) are also an increasing source of concern to public-hospital owners (DHBs), who have made reducing such errors a high priority.[10] Quality monitoring in medical care is becoming more prevalent in OECD countries, and will be important for New Zealand (see Box 1.1). These measures will need to be improved since modelling the hospital production function is very difficult (Glazer, McGuire and Normand, 2008). For example, mortality rates should be adjusted for *ex ante* patient health status, because otherwise hospitals or doctors may be reluctant to treat sicker, high-risk patients for fear of spoiling their performance scores.

Table 3.2. **Health-care quality indicators**

Indicator	Rank[1] within OECD	New Zealand data	Highest and lowest in sample (percentage points)
Breast cancer 5-year survival rates	10 out of 19	83.5%	(89.4; 75.7)
Colorectal cancer 5-year survival rates (males)	4 out of 11	59%	(69.5; 4.9)
In-hospital mortality rate, stroke			
Hemorrhagic stroke	20 out of 23	31%	(36.9; 10.9)
Ischemic stroke	18 out of 23	12%	(20.1; 3.3)
In-hospital mortality rate, myocardial infarction	1 out of 24	5.4%	(24.5; 5.4)
Mortality rate from asthma	22 out of 25	0.35 per 10 000	
Amenable mortality[2]	14 out of 19	9.56 per 10 000	

1. Number 1 means highest performance.
2. Death from treatable conditions.

Source: E. Nolte and C.M. McKee (2008), "Measuring the Health of Nations: Updating an Earlier Analysis", *Health Affairs*, January/February; OECD (2007), *Health at Glance*, OECD, Paris.

Equity of access and outcomes

Social disparities in health are a common feature of industrialised OECD countries and are likely to reflect inequalities in per capita incomes and a host of factors strongly related to income (education, jobs, housing, lifestyles, attitudes, etc.). New Zealand does not score particularly badly in terms of regional variations, but, despite some recent progress, substantial minorities, the Maori and Pacific Islanders, face worse health outcomes and demonstrate higher risk factors for chronic disease than New Zealanders of European or Asian descent (Table 3.3). Socio-cultural barriers may imply reluctance by ethnic minorities to seek primary care. Co-payments for such care until recently were high, covering close to the full cost of service. Maori and Pacific peoples also have lower rates of private health-insurance coverage, which is often used by wealthier people to "skip the queue" in order to gain faster access, in private hospitals, to elective treatments for which there are public hospital waiting lists. For such reasons, low-income minority groups have been the heaviest users of hospital emergency-room services, for which there are neither co-payments nor closing hours. This is obviously highly inefficient, given that the treatment sought is for problems of often routine nature or afflictions that could have been easily avoided with prompt primary care. Indeed, the absence of a long-term relationship with a primary-care physician is detrimental to the quality of care.

Eliminating barriers to health-care access for disadvantaged groups has been an important public policy goal. Waiting lists and problems in access were identified as key issues by the previous government's New Zealand Health Strategy. People in New Zealand are now encouraged to enrol with a GP in order to access higher public funding *via* lower

Table 3.3. **Health indicators for Maori, Pacific Islanders and others**

Unadjusted prevalence, total men and women

	Maori	Pacific	Asian	European/ Other	Total
Does not have private medical insurance	76.8	81.1	61.9	59.2	61.6
Has a health practitioner or service they usually go to first when unwell or injured	92.7	92.9	84.8	94.9	93.8
Has been diagnosed with a chronic health condition	65.5	48.7	37.3	69.9	65.7
Has ever been diagnosed with high blood cholesterol	13.6	13.4	13.6	19.2	18.2
Not currently taking any treatment for IHD[1]	24.3	23.0	10.8	11.1	12.0
Has ever been diagnosed with diabetes	5.8	10.0	6.5	4.3	5.0
BMI: Obese (all classes) – adults	41.7	63.7	11.0	24.3	26.5
Obese – child	11.8	23.3	5.9	5.5	8.3
Has ever been diagnosed with asthma	24.5	17.8	6.8	19.0	17.9
Current smoker	42.2	26.9	11.2	18.6	19.9
Hazardous drinking among drinkers	39.2	39.2	9.4	20.1	21.1
Hazardous drinking among total population	32.9	23.0	5.6	17.7	17.7
Life expectancy at birth (2005-07)					
Male	70.4	←	79	→	78.0
Female	75.1	←	83	→	82.2
Perinatal deaths (rates per 1 000 births, 2003)	9.1	11.9	n.a.	9.0	9.4
Fetal deaths (rates per 1 000 births, 2003)	6.5	7.7	n.a.	6.9	6.9
Memorandum item:					
Share in total population[2]	14.9	7.2	9.7	77.7	…

1. Ischaemic heart disease (for those with IHD).
2. Total does not equal 100 because ethnicity is self-reported and an individual can belong to more than one ethnic group.

Source: Statistics New Zealand and Ministry of Health (2008), *A portrait of Health – Key results of the 2006/07 New Zealand Health Survey*, 4 June.

co-payments. There has also been substantial momentum in opening Maori clinics, using Maori staff and allowing traditional Maori healing techniques for the Maori population. It is true that lower per capita health spending for such groups could reflect a local optimum, insofar as other needs, such as housing, education, and disposable incomes, may be more pressing. Levelling out health outcomes would, all else equal, entail lower spending (and worse outcomes) for the currently better-performing groups, but if equality is a major shared objective this would be justified (Sassi and Hurst, 2008).

The fiscal sustainability challenge

The challenge for policy is to ensure a high level of health-system performance in the future – that is, high quality and accessible care providing satisfactory health outcomes – at as little as possible extra cost, despite inexorable demographic, wage and technology pressures. Increased private cost-sharing, major budget reallocations from other items to health, or some further rationing of care are the only alternatives.

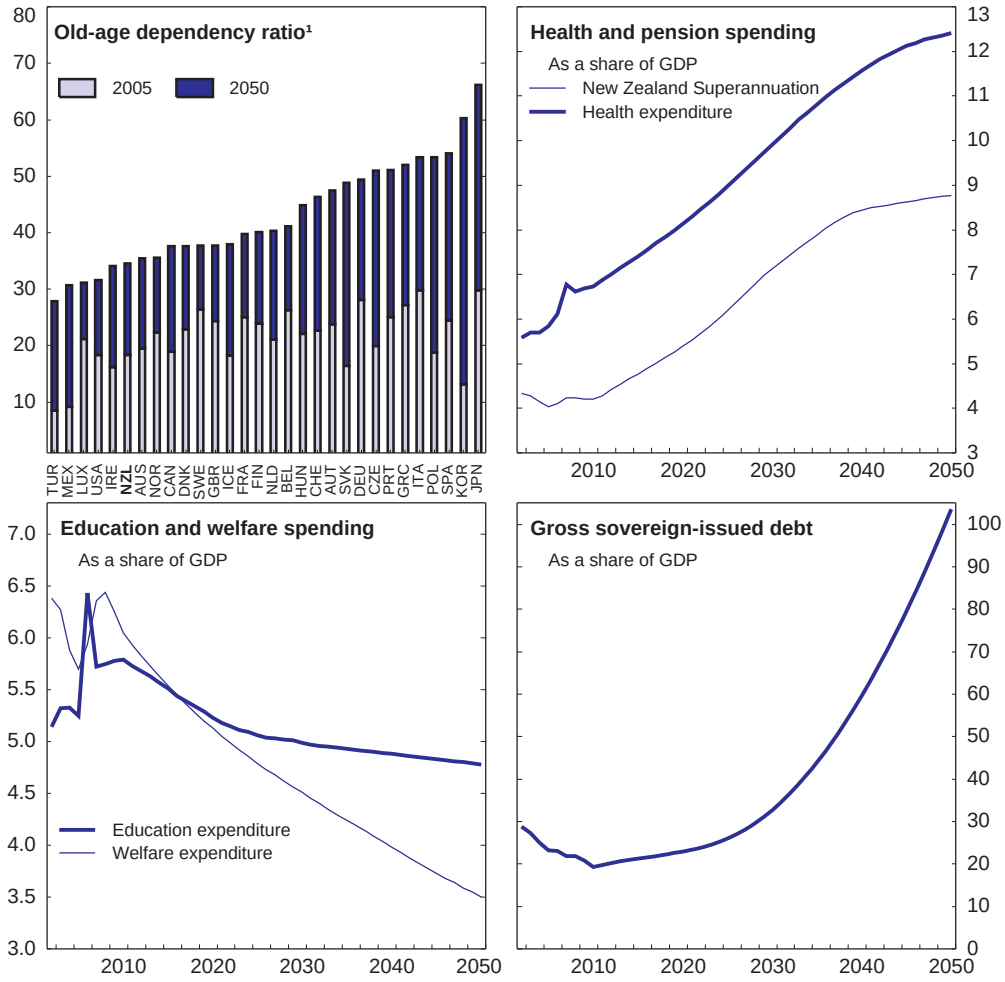
The long-run fiscal context

Given the demographic shifts discussed in Chapter 1, the old-age dependency ratio is projected to increase from one-fifth today to one-half by 2050 (*i.e.* from five people of working age per retired person to just two), around the OECD average (Figure 3.6). The greater proportion of elderly and especially of the very old will put pressure on the fiscal situation through higher health and pension spending. Technology and cost pressures will be the main factor driving higher health spending, however. Public health expenditure in New Zealand is officially projected to more than double as a share of GDP (from 6 to over 12%) in the base-case scenario (Treasury, 2006). NZ Super Fund payments may likewise double (from 4 to 8%), but this smaller absolute rise is effectively offset by decelerating spending on education and welfare, if these are held fixed in real per capita terms. With assumed stability in the tax-to-GDP ratio, the debt would rise gradually from around 2010 to 2025 and thereafter accelerate, ending up at 100% of GDP by 2050 from 20% in 2020. In this scenario, in order to keep the debt ratio stable while honouring pension promises and preserving the present scope of social services, other (non-social) spending would have to fall by fully half relative to GDP, or else taxes would have to go up by some 11 percentage points of GDP. Uncertainty applies to the demographic, technological and other spending determinants, since even small differences from the base-case assumptions can cumulate over the long term to relatively large fiscal impacts. And as seen in Chapter 1, without fiscal consolidation in coming years recent economic events would be on track to push the debt ratio up very substantially by 2023, before ageing pressures even start, rendering the current long-run projections out of date. Nonetheless, the exercise is imperative to be able to plan for the future and react appropriately to events as they develop.[11]

Major drivers of health-care spending

Per capita real growth in health spending has averaged 3% since 1950 but accelerated to over 4% in the last decade. Similar trends are observable among all OECD countries, but New Zealand's recent public-spending acceleration has been relatively sharp. Such a pace cannot continue without limit. Official projections show that if the ratio of public health spending to GDP is to (merely) double in the next 50 years – just as it did over the last 50 under conditions of far more favourable population dynamics[12] – then the excess of spending growth over that of GDP must greatly diminish in intensity compared with the

Figure 3.6. **Long-term fiscal story**



StatLink http://dx.doi.org/10.1787/563127782352

1. Share of population aged 65 and over in population aged 15-64.

Source: Treasury (2006), *New Zealand's long-term fiscal position database* and World Bank, *World Development Indicators Database*.

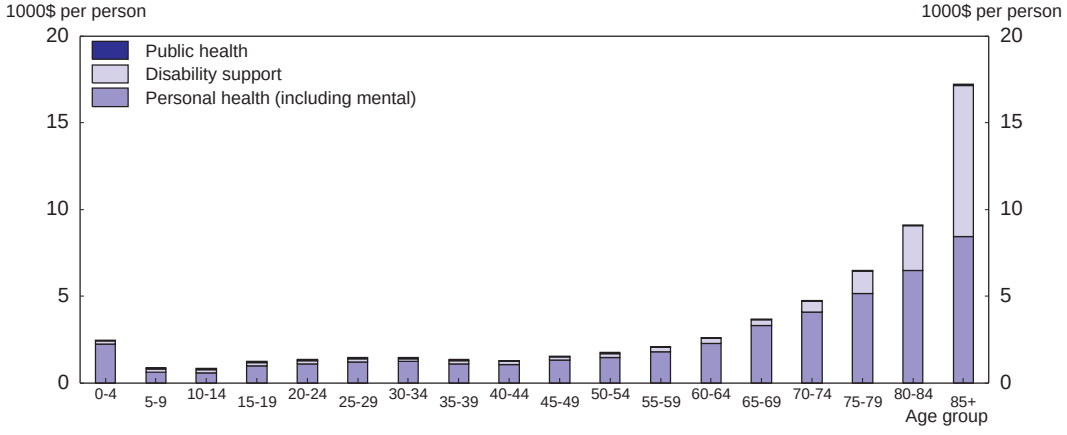
past, even turning negative for a time. And if recent fiscal trends are not reversed (Chapter 1), even this may not suffice for achieving fiscal sustainability.

Ageing and health effects

The projected future rise in public health-care spending is explained in part by ageing, although this is assumed to occur mainly through disability and proximity-to-death factors rather than ageing *per se*. Older people use health-care services more intensively than younger ones as their "health capital" depreciates at an accelerating rate, culminating in the last year of life which typically absorbs a disproportionate share of lifetime health expenditures.[13] The use of long-term care (disability) services rises dramatically at older ages (Figure 3.7). In other words, a rising share of older people means more years spent in disability and a higher frequency of death, hence higher health and long-term care costs during the transition to a new steady-state demographic structure. Declining disability rates for given age groups should attenuate these impacts, however: in dynamic equilibrium, or so-called healthy ageing, an

Figure 3.7. **Government health expenditure by age and service group**

Males and females combined, 2003/04



StatLink http://dx.doi.org/10.1787/563160674401

Source: Treasury (2006), *New Zealand's Long-Term Fiscal Position Database*.

extra year of life should bring an extra year of good health. Also, "distance to death" (the proportion of people in their last year of life) rises more slowly than the share of older people thanks to lengthening life spans. OECD (2006) estimates that, for the OECD on average, roughly half of the pure ageing *cum* (small) death effect is offset by healthy ageing. For New Zealand this implies that ageing may add on balance 2½ percentage points of GDP to public health-care spending by 2050, of which the lion's share is absorbed by long-term care, given the high incidence of disability in the elderly population. These net ageing effects are subject to forecast risk, and in particular the healthy-ageing assumption might be seen as optimistic. Policy-makers should build in a safety margin for disability-rate uncertainty and also attempt to influence disability rates by cost-effective preventive public-health measures.

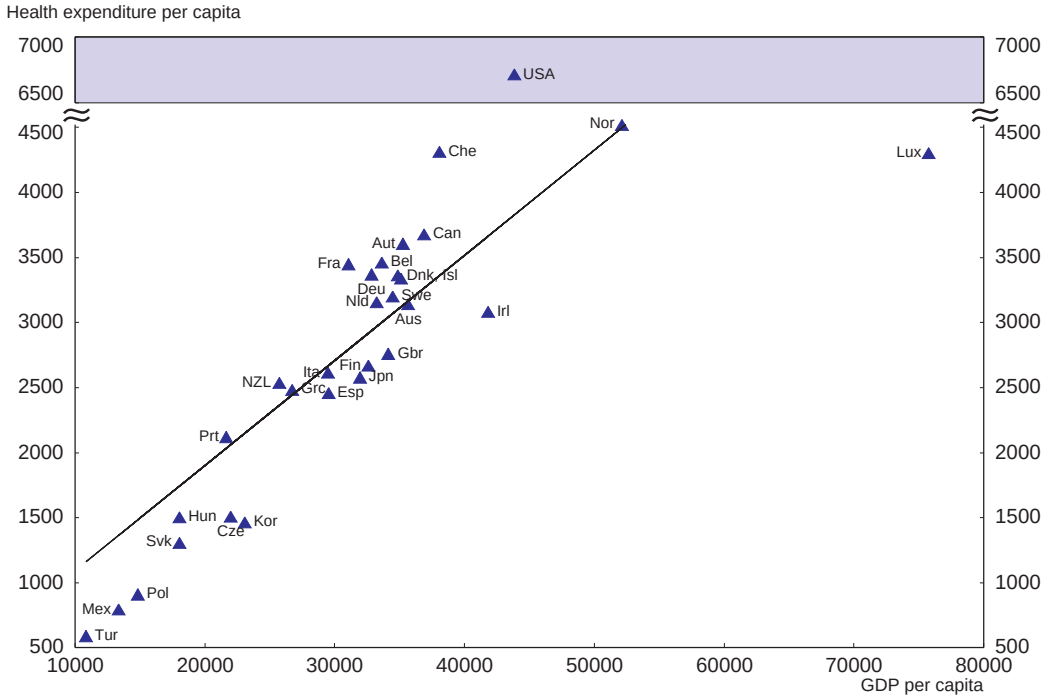
Income (coverage) and price effects

But the predominant spending drivers are inherent in the demand for health care as a benefit, independent of age or health status. The aggregate pure income elasticity of demand for health care is estimated to be around unity for OECD countries.[14] This suggests that at the national level, medical care is less a necessity than a normal good, with health spending driven not by the amount of disease but by the amount available to spend (Getzen, 2008). Insurance coverage thus expands in tandem with rising living standards, boosting demand and spending. Technological progress not only meets society's existing health needs but also enlarges them further as new procedures become available or more affordable. In this perspective, New Zealand's below-average level of per capita health-care spending partly reflects a below-average level of per capita GDP (Figure 3.8).[15] One positive implication is that, in principle, rising health spending and pressures to spend more can be controlled by government. They are not inevitable and inescapable but part of an implicit political deal as to what is affordable and reasonable in return for political support.

Yet such income effects cannot explain a doubling of the health spending to GDP ratio, as an elasticity of 1 implies a stable ratio.[16] Therefore the demand "residual" is large. It has grown over the past 35 years by around 1% per year on average for the OECD countries (OECD, 2006) and also for New Zealand (Treasury, 2006), and it is thought to reflect relative-price and cost-of-technology pressures (Box 3.2). This hypothesis is partly corroborated by

Figure 3.8. **Per capita expenditure on health and GDP, 2006**

USD PPPs, 2006[1]



StatLink http://dx.doi.org/10.1787/563202652043

1. Or latest available year.

Source: OECD *Health Data 2008* and OECD, *Annual National Accounts*.

Box 3.2. **Health-care cost pressures**

Econometric estimates show a large, positive and persistent time trend in health-care spending across OECD countries, after controlling for age, health and income determinants.[1] There are a number of reasons to suspect that this reflects high cost and price pressures in the health-care sector, as follows.

- *Technology.* There is a genuine social need for returns to innovation to be sufficient to provide incentives to undertake further R&D. Policies typically try to assure this (as marginal cost pricing does not) by means of patent protection, basic research grants and insurance listings – which, respectively, keep prices high, reduce investment costs and expand the market – notably in pharmaceuticals that are at the forefront of medical innovation (see Sloan and Hsieh, 2008). However, this channel is weakened in New Zealand because of tight policy control over the prices of imported pharmaceuticals and the lack of any significant domestic production. In other words, New Zealand receives technology (and its costs) exogenously.
- *Wage push.* Doctors' exceptionally long training periods, highly specialised skills and increasing use of high-tech diagnostic tests and equipment push up their fees relative to those earned by other professions, and also those of physician specialists relative to GP's. Such wage inflation is often exacerbated by rents secured by entry barriers into the medical profession or union activism by public employees.[2] New Zealand faces a highly mobile international market for health-care professionals. As a small distant country it must offer competitive wages to lure them back in. There is little policy can do besides educating more doctors, domestic and foreign, and offering them attractive working conditions and other non-pecuniary rewards.

Box 3.2. **Health-care cost pressures** *(cont.)*

- *Baumol's cost disease*. Prices of health care rise faster than those of other goods and services due to a lack of productivity growth in labour-intensive public services (such as public hospitals) and economy-wide convergence of nominal wages. Hence, GDP generates little in the way of increased resources to be spent in the public sector, and taxes must rise faster than GDP in order to keep financing the same level of public services. This problem affects long-term care in particular, since it is generally more labour-intensive and lower-skill than are acute services.
- *Health-care market failures*. A key problem afflicting OECD health-care markets is weak price signals due to extensive insurance, implying demand well in excess of socially desirable levels (moral hazard). Doctors, with superior information and implicit patient trust, have considerable discretion over practice patterns. These are influenced *inter alia* by ethical constraints, practice protocols, time available and income targets (Simoens and Hurst, 2006). If paid on a fee-for-service basis, doctors may induce overprovision of non-essential care, over-utilisation of expensive diagnostic technology (especially if they have an ownership interest in these facilities), inadequate access and quality, and unsafe care; on the other hand, doctors can be important rationing agents for the state in tax funded systems, internalising available resource levels and practising accordingly even as they simultaneously act as advocates for their patients.[3] Disease boundaries are expanding fast as new treatments become available. Many conditions that were formerly considered risk factors, or just part of life, are now officially labelled as "diseases" needing treatment.[4] Industry also has a very significant effect on increasing the demand for extra spending on new drugs and technologies often before they can be independently assessed for cost effectiveness. Because of resource constraints, the resulting excess demand spills over into wages and waiting lists. Budget caps, regulations and microeconomic incentives can offset moral hazard, at least in part.

1. OECD (2006) runs a panel of 30 OECD countries with health expenditures per capita (H/N) as the dependent variable regressed over the period 1970-2002 on: average population age (A), per capita income (Y/N), and time trends for the 70s, 80s, and 90s/00s (T70, T80 and T90). The estimated coefficients from the specification with income per capita constrained to 1, are as follows (with all being significant at the 5% level; $R^2 = 0.49$):
   Log (H/N) = 1*Log (Y/N) + 1.56*Log (A) + .021*T70 + .013*T80 + .010*T90. The declining time parameter is thought to reflect efficiency-enhancing reforms in health care.
2. There is evidence in the United States that some medical specialties command extremely high rents, notably radiology, anaesthesiology and dermatology, with estimated IRRs near 100% per year (Nicholson, 2008).
3. The incidence of iatrogenic illness (provoked by unsafe or unnecessary treatment) is far from trivial in many OECD countries (see *e.g.* OECD, 2006, Health Care Quality Indicators Project). On the other hand, it is also true that there is no other profession where ethics is so thoroughly inculcated into the whole training and preparation process (Golden and Sloan, 2008).
4. See Berndt and Donohue (2008) on the effects of direct-to-consumer advertising of pharmaceuticals (interestingly, allowed only in the United States and New Zealand), often promoting "lifestyle drugs" or ones of dubious necessity, and Leader and Corfield (2008) on psychosomatic causes of disease.

available price data. According to OECD national accounts, New Zealand's health-sector price deflator is high in relation to the overall GDP deflator, and not far below the OECD average (Table 3.4).[17] This reflects the fact that New Zealand is not only a small country in a global labour market for doctors and nurses but also that New Zealanders tend to form their expectations based on comparisons with Australia, the United States and the United Kingdom – countries which are wealthier. New Zealand should be taking its cue from countries with comparable per capita GDP.

Table 3.4. **GDP price deflators for health**

2005 PPP benchmark

	Health price levels relative to OECD (OECD = 100)	Health price levels relative to GDP (GDP = 100)	*Memo.*: GDP per capita (OECD = 100)
Australia	99	96	113
New Zealand	**90**	**106**	**85**
Portugal	77	113	69
United Kingdom	98	103	109
United States	125	116	144

Source: OECD, *National Accounts database*.

According to OECD (2006), if the residual growth factor continues unabated at its past trend rate of 1%, considered the benchmark ("cost-pressure") case, it would add an extra 3.6 percentage points of GDP to New Zealand's health spending bill by 2050 and be most likely attributable to acute rather than long-term care.[18] Together with the above adjusted ageing effects, this would bring the health-spending-to-GDP ratio to 12.6% by 2050. On an alternative "cost-containment" scenario, whereby policies force the residual cost growth factor to converge to zero by 2050, health costs could be kept to 10% of GDP, still leaving a challenge for fiscal policy (Table 3.5). The most recent government projections are over 2% of GDP more pessimistic than those of the OECD, despite a somewhat lower 2005 starting point and using apparently similar methodology, albeit without the cross-country constraints that were imposed by the OECD for purposes of comparability and using different assumptions regarding GDP and disability rates.[19] In the Treasury's cost-pressure scenario, public health spending including disability services, comparable to the OECD's definition of long-term-care spending, balloons to 15.2% of GDP in 2050. In the baseline projections (underlying Figure 3.6), which corresponds to the OECD's cost-containment scenario, health spending rises to 12.4% of GDP. On either set of scenarios, fiscal sustainability would require convergence to zero (or even below) in the residual growth factor much sooner than 2050.

Table 3.5. **Projection scenarios for public health expenditure in New Zealand**

Per cent of GDP

	1970-2002 changes	2005-50 changes		Level 2005	Level 2050	
	Historical back cast	Cost pressure scenario	Cost containment scenario		Cost pressure scenario	Cost containment scenario
OECD (2006)						
Age effect	0.2	2.4	2.4	–	–	–
of which: long-term care	–	1.5	1.5	–	–	–
Residual	1.4	3.6	1.2	–	–	–
of which: long-term care	–	0.4	–0.3	–	–	–
Total	**1.7**	**6.2**	**3.6**	**6.4**	**12.6**	**10.0**
of which: long term-care	–	1.9	1.2	0.4	2.4	1.7
NZ Treasury (2006), total	–	**9.4**	**6.6**	**5.8**	**15.2**	**12.4**

Source: OECD (2006), "Projecting OECD health and long-term care expenditure: What are the main drivers?", *OECD Economics Department Working Papers*, No. 477, OECD, Paris; Treasury (2006), *New Zealand's Long-Term Fiscal Position*, Wellington.

Macro control instruments

New Zealand's health system, like other "integrated" models, features one dominant payer (plus ACC) with tight budget control over the health spending envelope and regulatory and/or monopsonistic power to keep prices and volumes down. Efforts at priority setting have sought to get the most out of each health-care dollar *via* allocative and technical-efficiency gains. Shifting costs onto the private sector through increased cost-sharing has been another policy used in the past, but partially reversed under the last set of reforms to primary health care.

Budget caps

The single most important strategy used in New Zealand for containing overall health expenditure is the setting of a national global budget for health by the central government (Ashton, 2009). The budgeting approach requires discrete decisions by Ministers to increase original nominal allocations. It also sets an allowance for new spending which, if it exceeds that allowance, must crowd out other options (Chapter 1). Trends in health spending thus largely reflect deliberate policy choices – putting into perspective the foregoing discussion of cost drivers and projections. In the 1980s and early 1990s, budgets for health spending were necessarily tightened, and structural reforms contributed to the effort by emphasising cost control and price competition. Since the late 1990s, health funding rebounded and structural reforms changed course as priorities shifted toward output, equity of access and quality. Higher public hospital salaries and reduced patient cost sharing for primary care were pursued as the principal means to these ends. Efficiency, even if less explicitly formulated as an objective, remained implicit in the quest for quality. Robust cyclical conditions facilitated a reallocation of government spending from welfare and debt finance toward health, among other items (Table 3.6). Other OECD countries have had similar experiences, sometimes involving backlashes from earlier unpopular cost-cutting (Docteur and Oxley, 2003). There is a considerable number of OECD countries, in addition to New Zealand, where health spending has grown at more than double the rate of GDP since the turn of the decade (Figure 3.9).

Table 3.6. **Core Crown expenditures**

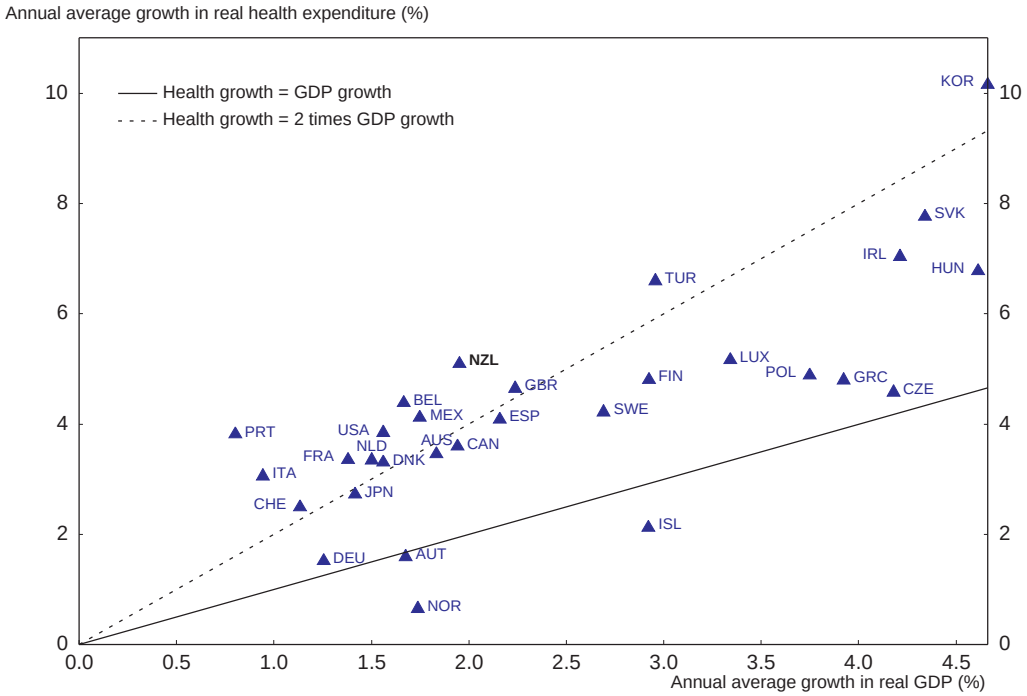
As a percentage of GDP, June years

	1972[1]	1980	1990	2000	2008
Social security and welfare, Government Superannuation Fund	5.7	10.9	14.5	12.2	10.3
Health	4.3	5.7	5.3	5.5	6.3
Education	4.9	5.1	5.7	5.1	5.3
Core government services	1.7	2.3	3.3	1.8	1.9
Law and order	0.5	0.8	1.3	1.4	1.6
Defence	1.7	1.7	1.9	1.0	0.9
Transport and communications	2.1	1.3	1.2	0.8	1.2
Economic and industrial services	0.6	2.0	1.2	0.8	1.6
Heritage, culture and recreation; Primary services, housing and community development; Other	1.9	2.4	0.4	0.7	1.2
Finance costs	2.4	3.8	6.6	2.0	1.4
Total	**25.8**	**36.1**	**41.7**	**31.4**	**31.7**

1. March year.
Source: Treasury.

Figure 3.9. **Annual average growth in real expenditure on health and GDP**

USD PPPs, 2000-06[1]



StatLink http://dx.doi.org/10.1787/563203583344

1. 2005 for Australia, Japan, Slovak Republic and Turkey.

Source: OECD *Health Data 2008* and *Annual National Accounts database*.

Looking ahead, however, the budget context will deteriorate significantly due to both discretionary measures and cyclical factors (see Chapter 1). A much tighter constraint on Vote: Health appears inevitable in the short term, given the current economic and fiscal context. Although this reduces the danger that the health-spending boom will be prolonged, budgetary tensions will intensify. If public expectations – whether related to doctors' income or citizens' access to free care – are unwilling to accommodate sharply lower health spending growth, *i.e.* close to constant real levels henceforth, political risk would spill over into other sensitive items like pension promises, public employment or taxes, leaving policy makers in a quandary. In the long run, the budget constraint must be respected, one way or another, and, because of negative debt dynamics, the longer the adjustment is put off, the more wrenching it will be.

Shifts in spending mix

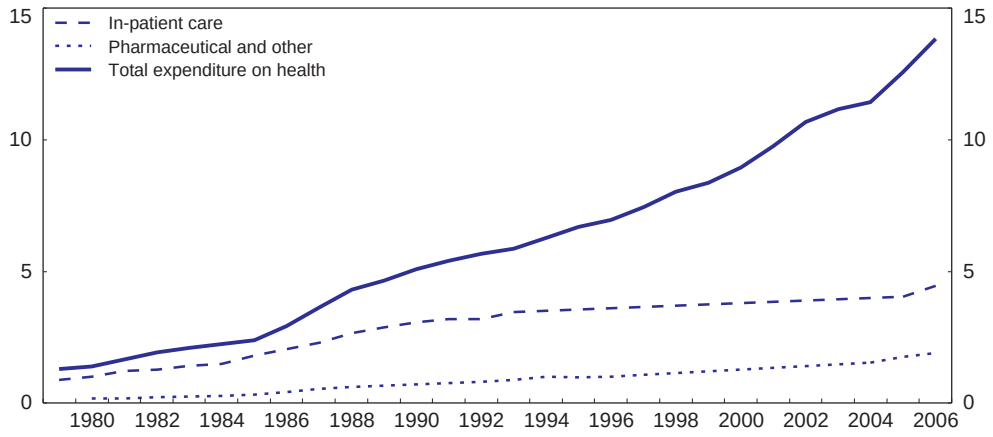
Another approach is to use budget policy levers to direct health-care resources toward cost-efficient primary care away from relatively expensive hospital care, where this is feasible. Similar considerations might hold for drug therapies as substitutes for invasive procedures. Research has shown that in countries where primary care is strong, *i.e.* comprehensive and accessible, health spending is lower, all else equal (*e.g.* Starfield *et al.*, 2005, cited in Mays and Blick, 2008). Such a shift can be accomplished in two ways: *i*) by a pre-emptive strategy based on timely use of primary care to avoid allowing problems to fester to the acute stage (resulting in so-called ambulatory-sensitive, or

preventable hospital admissions); and *ii*) by generating community clinics to substitute for less complex types of hospital care, notably for persons with chronic conditions who account for a disproportionate share of hospital discharges.[20] The first method is easier to exploit in the short run, while the second requires more gradual structural change. Shifting the distribution of national health spending toward regions of higher productive efficiency, or toward population groups of high ability to benefit, might likewise boost its overall efficiency. The more targeted approach would tweak strictly population-based allocation criteria by increasing funds for the higher marginal productivity areas, such as underserved populations or undersupplied services, or for hospitals in more efficient jurisdictions that could intensify their specialisations and serve wider population areas, with significant economies of scale – a development which, if desired, would be facilitated were there a purchaser-provider split for most hospital services.

The 2001 Primary Health Care Strategy (PHCS) in fact signalled such funding shifts in pursuit of the overarching goals of quality, equitable access and health outcomes. Significant funding was given to reducing patient co-payments, and funds were also provided for special incentives to DHBs serving populations with high shares of minority groups and the elderly. In principle, such a budget allocation is consistent with the above described targeted approach to enhancing efficiency. Though it is still early in the process, and research linking policy changes to specific outcomes has not been attempted, a significant part of the new money may have gone into provider or consumer windfalls. Primary-care demand expanded in response to lower co-payments, but its supply apparently did not (see further below). Hospital and primary-care costs have shot up even faster than overall spending, given exceptionally low pharmaceuticals spending growth (Figure 3.10).

Figure 3.10. **Trends in health care spending mix**

Billions of NZD



StatLink http://dx.doi.org/10.1787/563213572618

Source: OECD, *Health Data 2008*.

Implications

Although budget control can be effective in promoting the parsimonious use of health-care resources, budget caps remain blunt instruments. Wage squeezes and capital investment cuts under tight budgets may by themselves lower provider effort and

productivity, which only exacerbates excess-demand pressure and patient dissatisfaction. There may even be over-spending and consequent hospital deficits in order to justify a higher budget allocation the following year. Conversely, in the absence of increased supply, rising budget allocations could spill over into higher wages and prices with little gain in output or quality, as seems to have happened in the 2000s in New Zealand. With zero or only symbolic prices at the point of demand due to insurance as patient co-payments declined, demand expanded and worsened such pressures. While budget constraints are important, and have underpinned New Zealand's periods of efficiency gains, their ability to deliver better "value for money" requires meaningful incentives to achieve overall system objectives in both quality and cost dimensions by way of behavioural changes.

Priority setting, a legacy of the quasi-market reforms, is a more refined macro control instrument. An earnest effort has been made to allocate funding according to economic and not political criteria, *i.e.* channelling resources into those services that provide the greatest benefit. However, choices have occurred mainly at the margin, while ignoring the much vaster historical spending base where disinvestments in some areas may be needed. Indeed, almost no country looks into the base systematically (Ettelt *et al.*, 2007). Priority setting has also been hobbled by inadequate information or lack of knowledge of exactly where the biggest marginal benefits in terms of health outcomes may lie.

The clinical sustainability challenge

Clinical sustainability challenges are no less daunting than their financial counterparts, since not only the level but also the nature of health care will be changing profoundly in the years to come. Increasing prosperity and modern life stresses, and the corresponding tendency to adopt sedentary lifestyles and unhealthy diets or other such habits, have already produced a worrying rise in chronic diseases (*e.g.* diabetes). Patients are increasingly afflicted by multiple chronic conditions, implying an attendant high risk of disability, especially among low income and minority groups. Demographic trends will further raise disability and chronic disease rates, but the capability to meet these growing needs will be hampered by the ageing of the medical workforce itself, and high global mobility of medical professionals.

Innovation and infrastructure needs

The New Zealand Health Strategy, introduced in 2001 by the previous government, set out its ambitions for improving population health by means of increased equity in the allocation of available resources according to health need, behavioural changes toward more collaborative models of health care delivery and an increased focus on patient wellness instead of instances of illness (Minister of Health, 2001). Whereas the Strategy did not explicitly identify either cost containment or efficiency as objectives of policy, the new focus on population health was a clear effort to start addressing a number of chronic health problems that could potentially result in a massive increase in health care costs over the next few decades (Ashton, 2009). Substantial efficiency savings due to better incentives to innovate *via* new health care delivery models were therefore an important implicit longer-run objective. These models would embody fundamental shifts in clinical focus: *i*) from acute-care to chronic-disease-management (ageing, diabetes) approaches, *i.e.* increasing capacity for chronic care and reducing that for acute care; *ii*) from merely trying to increase the efficiency of treatment to pre-emptive population health and prevention policies to reduce health care costs; and *iii*) from doctor supply-led demand to

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multidisciplinary (holistic) patient-centred care, often focused in community clinics, and importantly including new modes of delivery for minorities (Maori-based clinics, etc.). International evidence is strongly suggestive of large efficiency gains from such integrated systems.[21] The aims of the strategy were thus consistent with addressing the twin challenges of clinical and fiscal sustainability. New Zealand may in fact be able to provide leadership within the OECD in terms of coalescing national health policies around innovative visions for a sustainable future.

The Strategy has been changing the health-care landscape in some encouraging ways. The Health Ministry launched public health campaigns and other policies to promote public health, and engaged the newly created DHBs in its efforts. Primary care was a main field of action: radical transformations in its funding and organisation, grouping GPs into networks (PHOs) and publicly funding them on a largely capitation basis, were implemented with a view to promoting intersectoral linkages, equitable access and preventive care. However, Treasury has been concerned that the DHB model has failed to encourage hospital efficiency (Box 3.1) and that the costly PHCS is not likely to have been very effective in value-for-money terms (Mays and Blick, 2008). Indeed, the new integrated care models have largely failed to evolve (see further below).

The new government has reaffirmed the principles of the New Zealand Health Strategy, particularly regarding the need for innovation in clinical care. At the same time, it plans to place greater emphasis on achieving efficiency in hospitals (Ryall, 2008). Hospitals will also have to become more specialised in order to keep up with fast changing technology and its appropriate application to patients, leaving community clinics as envisaged above to undertake more routine acute care (see Hofmarcher, Oxley and Rusticelli, 2007). As a small country, New Zealand can afford to have only a limited number of highly centralised tertiary (advanced specialist) services because of the critical mass of cases needed to provide a sufficient volume of treatment and build the necessary clinical experience and expertise.[22] Large catchment areas are also needed to attract staff in sufficient number to allow large teams critical to high-tech, often high-risk procedures. The need to maintain quality and patient safety, coupled with questions of financial sustainability, will mean a consolidation of the range of services delivered by most local hospitals, while still ensuring that people have adequate access to necessary hospital-based care (either through visiting specialist teams or by facilitating patient travel to specialist hospitals). This will be difficult politically, especially if it were to involve local hospital closures, but could be overcome with strong national leadership. New hospital facilities may at the same time need to be built or consolidated from former uses. The same holds for the new community clinics which will require physical structures that are pleasant and functional, able to house multidisciplinary staff, on-site laboratory services and attract patients. Individual decision-making by 21 DHBs may be too fragmented to make rational and coherent capital allocation plans; more regional and national collaboration is called for. Some steps in this direction have been taken, for example regional groupings of DHBs are jointly funding management service agencies to co-ordinate their hospital capital planning and management.

Information in the medical field is growing exponentially and technology is racing ahead of many health professionals' capacity to absorb it efficiently. The ability to process such information and to harness new technology will be important. ICT diffusion could help the clinical revolution by: *i*) managing fast-changing medical best practices in a centralised database made available to all doctors, along with software that can suggest

state-of-the-art diagnoses and treatments after doctor input of key parameters for any given case; and *ii*) allowing shared electronic records of patient information, so as to allow new modes of patient-centred delivery that minimise error and duplication (though privacy issues remain to be resolved). And as hinted above (Box 1.1), better information on costs, output and quality would allow funders to monitor providers more effectively and to develop payment incentives attached to their performance.

Looming workforce shortages

To staff the new clinical arrangements implied by the Strategy, profound workforce changes will be required. The traditional small business model of GPs' practices funded by fee-for-service arrangements ("piecework") is becoming less relevant. The rising "feminisation" of the health care workforce (the proportion of women doctors rose from 15% to 40% between 1984 and 2004) may make it more adaptable to such an evolution, as many women prefer stable lifestyles and the reduced financial and clinical risks of team settings within bureaucratic organisations. Women as relative newcomers are also likely to be more flexible about innovations in forms of pay (salaries, capitation *cum* fee regulation), softening the traditional resistance of the profession. Women (and, increasingly, men) often prefer shorter working hours and time off for family duties – a "work-life balance" that is probably easier to achieve in a team working environment than in solo practice. Devolving more of their routine tasks to practice nurses and/or nurse-practitioners would also importantly raise doctors' hourly productivity.[23] Furthermore, while ageing of the physician workforce is in itself a problem, it also presents an opportunity to change professional attitudes through a rapid generational change.

Population ageing, plus a continued rising share of Maori and Pacific Islander people, and their impact on the demand for the health workforce is a major issue in New Zealand, as the future supply of such workers is thought to be grossly insufficient.[24] Stepped up immigration to alleviate general working-age population shortages, possibly amplified by declining participation rates due to rising needs to take time off to care for ageing parents (informal care), will put added strains on the health care system. Tight human resource constraints will call for many more health care professionals, both native and foreign. In New Zealand's specific context, with a high rate of inward and outward migration of talent but especially in the health profession, planning in health human resources is probably more of a challenge than in most other OECD countries (Zurn and Dumont, 2008).

As New Zealand is a small open country, there is already a dearth of specialists, and, even if only a few opt to emigrate, that can have a major impact on health care delivery.[25] As in most OECD countries, there is also a significant imbalance in the geographical distribution of medical professionals. International migration plays a key role in balancing health care labour supply and demand needs. New Zealand has the highest proportion of migrant doctors in the OECD (foreign-born and foreign-trained doctors were respectively 52% and 36% of the workforce in 2006), and one of the highest for nurses. The number of NZ-born doctors living abroad represents half of foreign-born doctors living in New Zealand, and the number of NZ nurses living abroad is matched by those born abroad living in New Zealand. An increasing part of the foreign workforce, in particular doctors, is in New Zealand on a temporary basis, perhaps reflecting improving opportunities in their home countries (*e.g.* India and East Asia). While helping significantly to address rural workforce shortages, temporary migration is costly, especially as attrition and turnover rates tend to be quite high. This implies a need for health and immigration policy co-

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ordination to assure more stable and adequate health immigration.[26] Education is likewise essential. New Zealand trains proportionately fewer medical graduates than the OECD on average (7.9 *vs*. 9.4 per 100 000 population), and trains very few foreign students. The annual intake of medical students (capped at 285 nationally) should be raised sooner rather than later, given the long training periods, and, given the importance of immigration, the proportion of foreign students should be increased, especially in light of the existing flexibility to accommodate changes in NZ immigrant status. Improved wages and working conditions in the health sector will be needed to attract back health workers who have emigrated abroad and to draw new entrants into the medical profession.

These solutions may involve delicate trade-offs, nonetheless. Importing doctors on a non-temporary basis could be internationally inequitable if health needs in the country of origin are more acute. There is a need to consider dynamic- as well as static-efficiency implications of wage policies: if pay is set too low, it will discourage young people from entering medical studies while provoking greater brain drain of current professionals, while if set too high, it would not be affordable in the long run and would continue to contribute to the cost push seen in recent years. The existing *numerus clausus* on medical school intake may reflect the risk of investing too heavily in skills which have a high propensity to emigrate, but more significantly, it has been an important means of centrally enforcing aggregate health cost control. It will be important to find the right balance between maintaining a level of physician density compatible with satisfactory system responsiveness and health outcomes, on the one hand, and validating unaffordable social demands for better health care by excessive expansion of its supply, on the other. In this context, incentives for higher physician productivity and activity rates (*e.g*. later retirement) should be an important means of expanding supply capacity. Incentives could also play a role in improving geographic and specialisation distributions (Simoen and Hurst, 2006).

Incentives for efficient health care choices ("value for money")

A universal theme in health economics is that the market for health care is bedevilled by information problems – both acute asymmetries and missing knowledge about the effectiveness and costs of various treatments – among patients, providers, purchasers and payers. Information asymmetry can greatly exacerbate insurance moral hazard and generate high agency costs. In most publicly funded systems where patients are provided services free of charge, scarce health-care resources have typically been rationed by queuing or restricted access, ideally but not always in practice, on the basis of relative need. By contrast, bottom-up cost control that is based on (at least rough) appreciation of the opportunity costs of health-care choices and incentives to respond to them accordingly, would improve the ability to reach equity objectives, rather than coming at their expense. Top-down budget control would then be consistent with internalised incentives setting the right allocations, rather than misallocations that may arise from perverse incentives. Policies will need to establish: *i*) a well informed reckoning of costs, outputs/outcomes and behavioural responses that link them; and *ii*) financial, competitive and/or reputational inducements to price sensitivity by all parties. This section looks at reinforcing macroeconomic control by microeconomic incentives.

Strengthening the agency role of purchasers

The DHBs

The 1990s "quasi-market" health-care reforms, one of the most radical and rapid reforms of a public health system ever undertaken, entailed enormous administrative costs in the setting up of new purchasing agencies and, in particular, of efficiency-oriented, corporatised public hospitals (Box 3.3). Yet in conjunction with the macro budget squeeze, it enabled significant rationalisation of the hospital sector, along with rising hospital output, and hospital efficiency is estimated to have grown in the last three years of the regime (see Box 3.1). However, on the whole, gains were less than proponents expected, perhaps because the reform was not given enough time to work, though authors have cited high transactions costs of contracting, burdensome political costs of closing down inefficient services, and difficulty in generating competition when many public hospitals have geographic monopolies (Ashton, 2009). The ensuing 2000s counter-reform virtually reversed institutional arrangements for hospital services, creating the DHBs and imposing major adjustment costs all over again, and hospital performance again worsened, as discussed above. DHB hospitals furthermore inherited significant deficits which had developed during the 1990s. The Ministry of Health placed considerable pressure on DHBs to work within their global budgets from their inception, adding modest financial rewards

Box 3.3. **Reform shocks and political economy in the hospital sector**

There have been significant alterations in New Zealand's system of health-care delivery in the past two decades. Reforms up until the inauguration of the New Zealand Health Strategy in 2001 focused mainly on the hospital sector, where cost pressure was endemic as in all OECD countries. In the 1990s these reforms featured a purchaser-provider split and heightened cost consciousness. In 1993, purchasing of health-care services was devolved to four regional health authorities (RHAs). The public providers were set up as corporatised "profit-maximising" public hospitals, the Crown Health Enterprises (CHEs) vying for contracts with the RHAs in a quasi-competitive setting. The CHEs were deeply resented, however, as: *i*) their boards were entirely appointed by the RHA and accountable only to the RHA, rather than the communities they served, while *ii*) their running was fully entrusted to general management professionals, with health-care professionals sidelined. It would be hard to overstate the public's antipathy to the CHEs. Doctors saw it as their duty to protect the interests of patients against the perceived insensitivity of CHE "penny-pinching bureaucrats", and they consequently amassed considerable power and respect in civil society. In 1997, as the politics were already shifting with a new coalition government, purchasing was recentralised in a national agency, the Health Funding Authority (HFA), at strict arms-length from the Ministry of Health in an effort to keep political objectives out of the picture, and the CHEs were refashioned as not-for-profit Crown companies.

Intense dissatisfaction with health-care reforms is thought to have been a major factor leading to the change of government (from centre-right to centre-left) in 1999. The new government quickly overturned the quasi-market experiment. Purchasing was again devolved, this time to 21 District Health Boards (DHBs). The DHBs took over the 23 former CHEs, putting an end to the purchaser-provider split in the hospital sector, while also being responsible for purchase of primary care. The DHB governing boards now have a majority of locally elected members, while government appointees still make up the balance. The HFA was abolished and its functions were integrated into the Ministry of Health, whose bureaucracy subsequently increased.

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Box 3.3. **Reform shocks and political economy in the hospital sector** *(cont.)*

The new arrangement seems more stable, as the DHBs are quite popular, but abandonment of economic incentives in favour of a co-operative approach may not be sustainable. A synthesis of the two reform tracks now seems desirable, and this is what has happened to some degree. Indeed, differences between the two regimes are less stark and similarities greater than suggested by the political rhetoric (Ashton, Mays and Devlin, 2005). As seen, quasi-markets and private entry never really took off. DHBs remained legally accountable to the Ministry despite perceived accountability to their local electorate. The vast majority of resources were locked into existing services, with little possibility for reallocation. General taxation remained the basic method of financing across both regimes, with funding allocations likewise continuing to be based on population-linked formulae. The methods of paying health professionals did not change – a common missed opportunity to introduce micro-incentives for efficiency along with macro-level restructuring. The key differences observed, notably in the measures of hospital efficiency, probably boil down to a tight budget constraint in the former period and a looser one in the latter, with much ideological "spin" used to justify these shifts.

This experience also goes to show that significant political economy risks are attached to micro reforms in health care and must be managed. Even though the integrated system in New Zealand suggests a high feasibility of macro policy control, governments cannot simply decide what to do in a top-down manner without adequate public consultation, because they would stand to be rebuffed at the next election. Well meaning reforms could be derailed without strong public support and comprehension. Reform backlash can give rise not only to renewed rapid growth of spending but also loss of confidence in incentive-based reforms altogether. OECD countries in general are putting more emphasis on public satisfaction as an indirect measure of quality of the health-care system, imperfect as that may be. Cross-country experience also shows, perhaps unsurprisingly, that public satisfaction with the health-care system is highest in countries where spending is also highest. The lesson seems to be that efficiency reforms cannot neglect quality and equity of outcomes, nor public perceptions thereof. Because of the unique agency relationship between doctors and patient, and patients' implicit trust in their doctors, co-operation with professional stakeholders is more important than for other sectors, and their acceptance of reforms is critical. Health professionals must be involved in design and execution of reforms, and not be bypassed as they may have been on some occasions in the past (Docteur and Oxley, 2003).

Instability of reforms and frequent regime changes may have also reflected, in New Zealand's case, the effects of the move from a first-past-the-post to a mixed-member-proportional (MMP) electoral system in 1996. Under proportional representation, governments led by the largest party have not had majorities except with the co-operation of other smaller parties. This has weakened executive leadership and authority required to push through difficult health-system changes. The MMP electoral system may also play a part in reducing the odds of being able to close local hospitals where overall system efficiency would require this.

and penalties as levers. However, nationwide wage bargaining, including a policy of catch-up across different public services (notably nurse and police pay parity) worked at cross purposes with such controls (see Chapter 2), and more funding was provided to cover DHB hospital wage costs and deficits. DHB deficits were eventually eliminated (except for eight in chronic deficit) and debt fell, though Ministry cash infusions remained at high levels after 2004 (Table 3.7).

Table 3.7. **DHB financial performance**

NZD millions, June years

	2002	2003	2004	2005	2006	2007	2008
Revenue	**5 516**	**5 736**	**7 492**	**8 361**	**9 180**	**10 032**	**10 923**
Expenses	**5 803**	**5 906**	**7 540**	**8 392**	**9 224**	**10 013**	**10 966**
of which:							
Public hospital and health service providers	4 085	4 295	4 531	4 927	5 323	5 749	6 249
of which:							
Wages and salaries	2 533	2 711	2 867	3 107	3 439	3 718	4 021
Surplus/deficit	**–287**	**–170**	**–49**	**–32**	**–44**	**20**	**–44**
As per cent of net assets	–15.3	–7.9	–2.1	–1.3	–1.4	0.6	–1.2

Source: Statistics New Zealand.

The persisting problems in the hospital sector, *i.e.* declining efficiency and a sharp reduction in beneficial reform impact in the final reform phase (Box 3.1), appear to be symptoms of inadequacy in the role of DHBs as purchasing agents for their patient-principals and de-emphasised cost consciousness under the new reform philosophy. In theory, the DHBs should be well positioned to enforce greater efficiency of provision in their regions of responsibility. As budget holders, receiving formula-determined financing (capital investment budgets are allocated separately) from government under a hard budget constraint and able to keep any efficiency savings to better satisfy local needs, they should have an incentive to deliver maximum value to local citizens from the fixed pot of money. However, their incentives to do so may be weakened by two key factors.

First, accountability to the community is largely hypothetical, despite the presence of locally elected board members, in part because the local election process elicits scant interest. Board accountability goes solidly upwards towards the Ministry of Health, as enshrined in the legislation (the local accountability is only subjective). There is also a lack of operational autonomy *vis-à-vis* the Ministry, as lines of responsibility are not well drawn; the Ministry ties a large part of DHB funding to national objectives, whereas local objectives may differ, and imposes a heavy reporting burden with the negotiation of annual detailed DHB plans and their frequent monitoring. It also effectively devolves part of primary-care funding directly to the PHOs and their providers in order to be sure to reduce co-payments in line with Ministerial commitments and in so doing bypasses the DHBs. National wage bargaining for hospitals further rob the DHBs' of financial room to manoeuvre and innovate. The *de facto* lack of financial autonomy reduces the DHBs' ability to reallocate resources toward severely underserved areas, for instance outpatient radiology clinics, where marginal productivity gains would be enormous. The Ministry's monopoly over the purchase of working-age disability and maternity services[27] – because they are politically sensitive areas – may also interfere with the DHBs' ability to develop cost-effective models of integrated-care provision at the community level to relieve hospital waiting lists. Efficient disability services also rely very much on local knowledge and should be integrated for all ages.

Second, the potential agency role of the DHB is undermined by its concurrent ownership of public hospitals. The amalgamation of the purchaser and provider roles is a classic recipe for conflicts of interest and anti-competitive behaviour.[28]

- The DHBs face weak incentives to shift care away from hospitals toward primary care or disability services where suppliers could capture associated public subsidy rents. This

could also leave some hospitals with excess capacity and put a dent in public hospital employment. Circumventing this problem was probably one reason that the government found it necessary to develop a separate primary care strategy with additional funding, though it was never articulated explicitly as such.

- The DHBs may also be reluctant to outsource hospital services (except low-skill services), *e.g.* for laboratory tests or diagnostics, since outsourcing reduces business for its own hospital. Severe overcrowding in hospital radiology units arises from insufficient community radiology services outside hospitals, as DHBs have failed to make the needed investments or to attract private entry, forcing primary-care doctors to send their patients to the hospital for diagnostic x-rays, resulting in unnecessary cost in terms of both hospital resources and patients' time. Specialists tend to keep patients in hospital longer than warranted merely to benefit from priority access to hospital radiology services for inpatients (Mays and Blick, 2008). The system, in other words, seems stacked against greater substitution away from expensive hospital services, working at cross-purposes with the New Zealand Health Strategy.
- Shifting care outside hospitals, outsourcing and private entry may be tolerated only far enough to relieve pressure on waiting lists. However, such tolerance seems low. Despite a political commitment to reduce waiting lists, DHBs responded to incentives introduced in 2001 by bouncing patients on waiting lists back to their primary-care doctors – an unsustainable backwards shift (Howell, 2007b).[29]

Getting better efficiency in the public hospital system may require operational separation between ownership and purchase functions of the DHBs. If transferring public hospital ownership back to central government or, better still, to an arms-length public agency is not a viable option, then at a minimum, DHBs should jointly finance an independent management agency at either regional or national level, empowered with the autonomy to make investment decisions, oversee the running of public hospitals and monitor performance. Some steps in this direction have been taken, partly as a response to the previous health minister's keen interest in encouraging DHBs to collaborate on planning services and rationalisations, and to avoid unnecessary duplications. DHBs are jointly funding shared management service agencies to co-ordinate hospital capital spending and some service provision at the regional level.[30] Granting fuller operational autonomy to the DHBs in purchasing would, furthermore, greatly enhance their ability to be responsive to local circumstances and to set the right priorities. Therefore, the MoH should devolve all local spending and wage-setting powers to the DHBs, and replace annual DHB-negotiated agreements and associated obligations with fewer measures and simpler reporting focused on a "vital few" indicators that do provide insights into performance, particularly regarding the use of resources.

The PHOs

The 2001 PHCS provided two main instruments to achieve the goals of the national health strategy: increased budget subsidies to GPs and creation of the PHOs, *i.e.* networks of GPs and other primary health care providers, to channel these subsidies to members as capitation payments based on patient lists.[31] It was expected that private co-payments for primary-care treatment would decline substantially as capitation payments to doctors grew, which would in turn favour access. The cost of the increased subsidies absorbed a substantial portion of the extra budget room accorded to health over the years 2002-08, not being offset by reduced spending elsewhere in the health budget, and as noted there is no

room for further use of the budget policy lever. The challenges are serious, and the former government was anxious to make good on its investment.

The results for the first six years of the PHCS have been mixed, and mostly disappointing. Patient co-payments have generally fallen, but apparently by less than government subsidies rose. It is important in this context to note that co-payments have not been statutorily regulated, as they are in other countries (often *via* collective agreements between government and physicians' organisations establishing allowable fees), and, though there are local agreements between DHBs and PHOs and systems for arbitrating if practices seem to be charging excessively, these are not legally binding.[32] It is not clear what proportion of increased funding was retained by practices as additional income, but survey data suggest that GP incomes have increased considerably, in some cases doubling. Access has improved particularly for over 65s and ethnic groups belonging to Access PHOs (those who received funding earliest), although changing relative needs as well as access costs appear to have influenced this result, and overuse of hospital emergency rooms has continued to grow. But despite changes in consultation rates and co-payments in the desired direction, it does not seem likely that the reformed system is making a contribution that is commensurate with the large increase in public funding (Mays and Blick, 2008).

The results in terms of improved health through early detection and public health promotion – some of the ultimate goals of the PHCS – remain to be seen. GPs' ability to manage patient demand by use of preventive tools, a purported benefit of the capitation incentive, is likely to be small (Howell, 2007a), though general practice will still be a main way of reaching people in need of care. It is somewhat ironic that under blended payment systems, fee-for-service must be offered for preventative treatments such as inoculations, anti-smoking treatments, etc. (Robinson, 2001; Docteur and Oxley, 2003). Health education and awareness-raising activities may be best undertaken by DHBs and the Ministry because of their ability to exploit critical economies of scale and social externalities.

The PHCS has likewise failed by and large to deliver on its promise of more effective outpatient care for chronic conditions by means of a major structural shift in the primary care services toward innovative, co-ordinated, multidisciplinary and efficient forms. The envisaged role of the PHOs in leading this change was ill defined, as they have no particular powers or incentives to do so. They are also weakened by widespread lack of the requisite management skills. Nevertheless, there is considerable variability in performance. The smaller PHOs tend to be community based, intrinsically motivated and receptive to community needs, and they have achieved some encouraging local successes, especially in deprived, poorly served areas with obviously high needs. On the other hand, they are too small to effectively pool risks across member practices, engage in joint ventures with physician groups or justify high fixed costs of management. Larger PHOs, on the other hand, may be geographically scattered with little local loyalty and often appear to be mostly business propositions to capture and channel public money.

A fundamental problem is the lack of fully formed accountability relationships between PHOs and practices. PHOs simply pass on to doctors the majority of the capitation budgets (the First Contact funding stream) handed down to them by their DHBs. There is no conditionality attached to capitation payments to doctors, either on the bundle of services to be provided or the additional fees that can be charged to patients.[33] Entrenched resistance by physicians to loss of their autonomy as professionals and of their freedom to

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set charges as independent small business owner-operators has resulted in a messy compromise and a unique form of capitation contracting with no effective regulation of variable fees. The traditional independence of the GPs may also explain their lack of interest in collaborating with colleagues in search of system efficiencies. However, it is also true that Independent Practitioners' Associations arose spontaneously in the 1990s, making notable movement toward collaborative forms of primary care delivery in the face of potentially influential purchasers, but which were superseded by the PHOs (Box 3.4).

A lack of accountability means that financial risk is progressively passed up the funding chain, leaving the DHBs as the residual risk holders, while the new funding arrangements have magnified such risks; that is, DHBs allocate capitation budgets to all

Box 3.4. **Developments in organised primary care***

The 1990s quasi-market regime

General practice physicians (GPs) in New Zealand have traditionally been solo practice operators. This began to change with the 1990s quasi-market reforms setting up four regional purchasing agencies (later merged into a central agency). GPs saw it in their interest to band together as not-for-profit independent practitioners' associations (IPAs) as a counterweight to the new monopsonies in contracting. The government also recognised the inefficiency of individual GP contracting and it funded some initial studies and IPA pilots in consultation with GP representatives. The associations swiftly grew. By the late 1990s, over 70% of GPs were members of over 70 IPAs nationwide. Many IPAs began to contract with the purchasing bodies for bulk funding for referred services such as prescribing and laboratory testing, reinvesting retained savings in new primary care services such as health promotion, screening, patient fee reductions, integrated care clinics, mobile services and continuing doctor education. The larger ones built up considerable infrastructures of managers and support staff, provided their members with patient-management software, collected and disseminated best practice guidelines and clinical protocols, and experimented with quality monitoring tools.

The purchasing model spawned other types of primary care organisations as well. A small number of community nonprofits, with a focus on serving deprived populations and having their roots in the pre-1990s trade union-sponsored community health clinics and some indigenous Maori health organisations, were generally funded on a capitation basis and paid their doctors by salary. They stressed multi-disciplinary, patient-centred approaches to primary care delivery within a community-wide service setting attending to the whole person, and charged minimal patient co-payments.

The Primary Health Care Strategy (PHCS, 2001)

The government that came into power in 1999 wished to create a primary care-focused health system aligned with the principles of the Alma-Ata declaration of the World Health Organisation. The subsequent PHCS circumvented IPAs as the key vehicle for delivering organised primary care, and instead tried to emulate the community non-profit model and generalise it *via* establishment of the PHOs with universal capitation and community-based governance. Gauld (2008) notes that the motivation for reforms seemed more ideological than evidence-based; in particular, a high degree of public oversight and control was preferred to private initiative and (even non-profit) ownership. The government implemented PHO formation quickly, without experimental pilots, using money as a driver: new capitation money for GPs designed to reduce patient co-payments, as well as extra funding for chronic illness prevention and treatment, could flow only through membership with a PHO.

Box 3.4. **Developments in organised primary care*** *(cont.)*

Some IPAs have evolved into PHOs, while others continue to exist as management support agencies serving the larger PHOs. But, the overall structure of primary care has become more complex and unwieldy. Performance varies widely and management costs range between 7 and 15% of total PHO costs with smaller ones at the high end: this suggests the need for mergers or pooling management services across smaller PHOs. The establishment of a new bureaucratic layer has created demand, without a corresponding increase in supply, for skilled staff particularly in administration, service commissioning, public health and community service delivery. This may partly be, as Gauld suggests, a legacy of the 1990s, when national workforce planning was suspended, and partly due to the sheer number of primary bodies.

Toward a synthesis?

Despite the tacit attempt to relegate the role of the IPAs through the establishment of the PHOs, the IPAs have focused on other functions (management services, clinical support services and advocacy) while doctors continue to control patient charges, albeit with some new constraints on year-on-year increases. The DHBs, themselves quite new, lacking expertise in primary care, focused on hospital services and lacking accountability levers, did not play a driving role in the PHO establishment process. While this hands-off approach left open the possibility of local innovation, it also left unresolved many issues. In time the distinctions between IPAs and PHOs may fade but the question remains as to why so many bureaucratic layers are needed and whether this is efficient. Funding remains an unresolved issue. GPs have always reserved the right to levy patient co-payments and accept government subsidies in order to limit these. Despite government's efforts, there has never been a fixed or standardised co-payment level, although his has begun to change for some patients, where their general practice has joined the Very Low Cost Access scheme.

Ultimately, if DHBs are to be the planners and purchasers of services for their population, and if they are to be held to account for making progress towards the goals of the PHCS, they will need more autonomy and flexibility to determine the role and configuration of the range of primary health care bodies in their districts, as well as the contractual relationships that they maintain with those agents.

* Draws extensively on Gauld (2008) and numerous primary sources cited therein.

PHOs situated on their territories according to risk-adjusted enrolled population formulae. However, such risk adjustments, based mostly on gender, age and ethnicity, are extremely rough and have been estimated to account for only about 20% of actual risk (Newhouse, 1996). The main type of "unforeseeable" risk to the DHB is that primary care providers will shift patients to hospital or deny care to sick patients because of the disincentives to effort and incentives to excessive referrals embodied in capitation funding – though they are just as likely to shift extra costs into patients in the form of higher user fees. Insofar as DHBs are not able to cover the resulting deficits of public hospitals (which by definition cannot go bankrupt), they pass risk up to the Ministry, which must award larger budgets, with the taxpayer being the final risk-bearer.

Physician-practitioners also hold some residual risk under this system (Howell, 2007b). If their patients happen to be particularly sick (and likely poor), they have to provide a greater volume of services than anticipated by the capitation payment, and

possibly raise their fees in order to survive as a business concern, as every patient clearly cannot be shifted into hospital. So risk gets passed down to sick people as well. Fortunate practices with healthier (often richer) patients may reap windfall profits under a notional average capitation formula. The question remains why providers have not sought efficiency improvements, such as combining with other providers, in order to avoid losing patients. But if all doctors end up raising their fees in tandem (which is not difficult, given that the PHCS has greatly increased the transparency of fees due to physician representation on PHO boards; see Howell, 2007a), then windfall profits are even higher, the risk of patients dropping out from the lists of struggling practices is alleviated and competition will take place on the basis of quality. The inability of the individual practitioner to fulfil the insurance function, as is required by capitation funding, means that the PHCS is likely to produce perverse results in terms of equity, with doctors engaging in cream skimming like any insurer. Indeed, a number of practices have "closed" their lists – potentially to lock in their good luck, or else as a response to more demand than they can handle.[34] Poorer, often transient, people are having difficulty getting access to doctors and forced to go the emergency room for treatment as before.

It should be the PHOs that absorb such risks because of their greater ability to pool risks, assuming that the smaller ones could be made to consolidate in some fashion. They are likewise best placed to regulate physician remuneration in the context of its risk management. Currently, the PHOs do not bear any risk, nor do they possess any risk-management expertise. They merely pass the financial risk on to service providers. The situation might be little altered even if capitation budgets were directly passed from DHBs to doctors, skipping the PHO middleman and associated costs. Critically, the PHOs are not the only payers: patients are still paying largely unregulated, private fees and the PHO does not know precisely what these are or how they will be set.

In conclusion, the PHOs are sorely in need of a *raison d'être* as an institution: if they were developed as a single payer, they could control both the fixed and variable portion of the physician's payment, with special attention given to their proper role as risk manager, and they could then be held accountable by the DHB for primary care overspending. Capitation payments to physicians should not be tied to their membership in PHOs, as this may act as a barrier to entry and restriction of competition, even if this was done initially in order to encourage GPs to join the new system.

Pharmac

Pharmac, the national pharmaceuticals purchasing agency, is a legacy of previous reforms and an exceptionally effective purchaser of international renown. The fact that its budget is tight and hard gives Pharmac enormous leverage in price negotiations with global pharmaceutical giants. In return for low prices,[35] companies get their products listed on the national register of reimbursable pharmaceuticals. The agency thus eschews any "fair value" approach to pricing, as is followed by some OECD countries (Docteur and Oxley, 2003). But the marginal cost of these products is most often minuscule compared to upfront research and development, so that the companies still stand to gain at the margin while assured of a residual market abroad. Pharmac's most impressive tool is its use of a set of decision criteria in choosing which drugs to list on the Pharmaceutical Schedule. On the basis of evidence on each drug's clinical effectiveness, risks and its cost-effectiveness according to cost-utility analysis (drugs can be ranked according to "quality-adjusted life years" gained per dollar, or QALY league tables), it is able to assess the opportunity costs of

alternative choices, which is the key to equalising marginal costs with benefits and achieving an optimal allocation for any given budget. Its ability to assess the true values of alterative products likewise enhances its bargaining position.

Over the 13 years of Pharmac's existence, pharmaceutical expenditure has grown at just 2% per year, less than the average rate of inflation. Pharmac estimates that in its absence, drug expenditure would likely have been significantly higher (for an equivalent bundle of drugs). However, there has been controversy over whether such cost containment has been achieved at the expense of restricted access to new and better drugs.[36] Consequently, access to medicines was one of three key objectives identified in the previous government's Medicines Strategy (2007), and one of the new government's first acts in office was to effectively override a previous decision by Pharmac to restrict access to an expensive new cancer drug – by funding it from the general health budget.[37] It is, however, highly desirable that Pharmac's independence be maintained, given that it is a success story in health-care cost control married with efficiency. It shows the way forward for the Ministry itself in how to set priorities, as technology expands the range of choices, to get most health value for the NZ taxpayer out of limited health-care budgets. If the government really wishes to fund expensive new drugs in the face of public and pharmaceutical industry pressures, it should expand Pharmac's budget but without interfering in its decisions.

The Ministry of Health

The Ministry of Health plays a crucial intermediary role as agent for several principals: it represents the interests of the general taxpayer (*via* the Minister of health and elected government) in getting good value for money in health care, as well as those of citizens as users of health care for an effective functioning of the system that assures patient satisfaction and health. At the same time, it serves as the principal *vis-à-vis* its devolved and distant purchasers, assigning them responsibility to implement the national goals that it has set in consultation with government.

Agents can best promote the interests of their principals if granted sufficient operational autonomy (trust) along with accountability for results (verification). As seen, the Ministry's dealings with the DHBs appear to suffer deficiencies on both counts. The Ministry may do well to divest itself of competing purchaser roles (for disability and maternity services) and delegate them to the DHBs to co-ordinate with other health services for their own populations in the ways they see fit. All funding to PHOs should ideally pass through the DHBs in order to clarify the lines of authority and accountability, and the freedom of DHBs to allocate their budgets should in general not be constrained. Pharmac's broad independence, by way of counter-example, is critical to its effectiveness as a purchaser.

At the same time, the Ministry needs to do better in monitoring by means of more selective performance indicators and motivating DHBs to fulfil their functions. This will require developing: *i*) pertinent and objectively observable measures of performance in the dimensions of both efficiency and quality; and *ii*) contractual relationships in the context of DHBs' budget holding that reward or sanction good or bad performance. In England, for example, well performing health trusts are granted greater freedom from central oversight and budget top-ups (which amount to pay for performance) but they are also motivated by highly publicised league tables and a high degree of management accountability. Although New Zealand has similar types of incentives, they are neither used so actively nor

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strengthened by sanctions. Hence, conditions might be put on covering DHB deficits, for example replacing managers in chronic deficit hospitals;[38] this would also spur DHBs to reform their own contracting with PHOs and providers. Publishing information in a high profile way on quality of provider services, a growing trend in the OECD, could encourage "benchmark competition" among providers (who incur reputational costs of bad assessments) while also empowering consumers.[39] Incentive design is important as well. The 2001 attempt to reduce waiting times for specialist assessments and treatments to no more than six months by awarding financial bonuses and other rewards to compliant DHBs resulted in unintended effects: the DHBs culled patients from waiting lists just prior to the end of each six-month period, sending thousands of patients back to their GPs for management (Ashton, 2009).

The interests of taxpayers/citizens can be best served by allocating Vote: Health on the basis of economic criteria. Putting extra resources where they can do the most good in terms of health outcomes would guarantee their efficient allocation, making sure that citizens are better off on average.[40] The Ministry should to this end reinforce its current efforts to raise the economic analysis capabilities of its staff. It should also collect evidence on the relative health benefits of various therapeutic approaches and apply these systematically across the board to choose among the multiple competing claims on the overall health budget. As this is clearly globally-relevant information, the OECD or WHO should perhaps do most of the data groundwork for national governments. Information provision for improved health market functioning is likewise needed. To help guide the choices of providers and purchasers, the Ministry should develop databases of clinical best practice and costs of alternative procedures, ideally setting up an agency to perform this task along the lines of the England and Wales National Institute for Clinical Excellence (NICE, which has an international consultancy arm that could help in this regard). Long-run strategic planning to ensure clinical sustainability is a vital Ministry role.

The Ministry has been moving in many of these directions. It is doing more to process and disseminate information, though sometimes in a form that is not easily accessible. It has specified ten health policy targets and has tried to systematise budget priorities in line with these targets, though targets are not always backed up by appropriate instruments to achieve them, as seen above.[41] In line with its national priorities, New Zealand is an OECD leader in spending on preventive care (Figure 3.11). Pharmaceutical and equipment spending is lower than elsewhere, showing an ability to exert strong budget control in these domains but also possibly some missed opportunities. An evidence-based prioritisation along the lines of Pharmac may or may not argue for greater use of drug-based therapy and high-tech diagnostics, to reduce hospital utilisation or extend QALYs. The Ministry has also initiated a process for assessing new technologies that may require collaborative decision-making. It will be important that these decisions be made rigorously on the basis of comparative cost-effectiveness, and that DHBs be fully engaged.

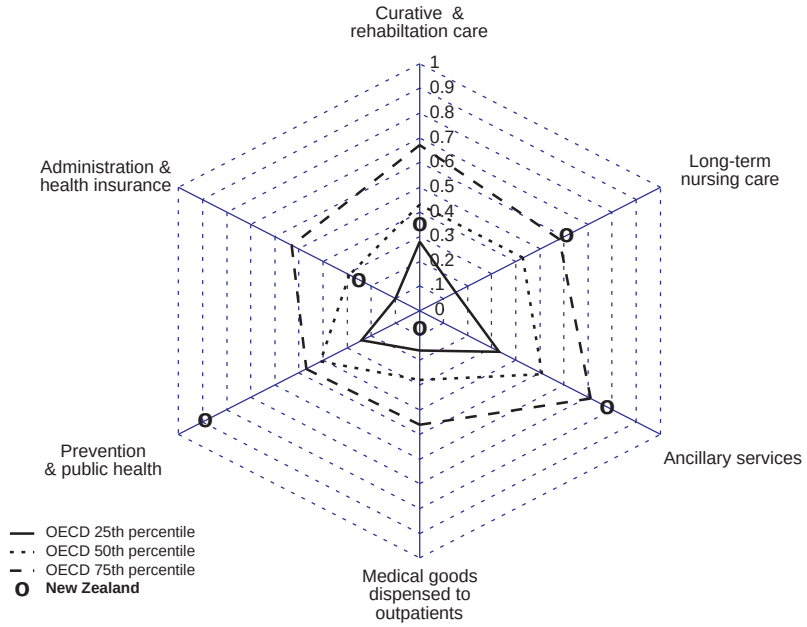
Optimising payment schemes

Hospital reimbursements

The low priority given to cost control under the last reform wave may have sidetracked efforts to measure costs of hospital services, which were being developed in connection with the earlier diagnosis-related group (DRG)- based hospital funding system.[42] Although DHBs continue to pay their "provider arms" using DRG-based cost weights, which are updated annually by a sector-wide working group (the National Pricing Project), service volumes attached to these prices are reimbursed *ex post*, rather than negotiated

Figure 3.11. **Health expenditure by function**

As a percentage of total current health spending in 2006



StatLink http://dx.doi.org/10.1787/563215601452

Source: OECD, *Health Data 2008*.

prospectively. Reimbursing hospitals on a standardised cost-per-case basis, in the hope that this would encourage them to be more efficient (as "beating the national average" would allow individual hospitals to pocket savings for their own uses), is an important first step but still leaves open the possibility of excessive spending through *a)* high volumes and *b)* high DRG prices achieved by all hospitals acting in concert to keep costs up (notably in terms of staff salaries). It may be time to revisit this approach in order to improve hospital cost management and cut operating deficits. Other countries have experienced unintended effects of DRGs offsetting efficiency gains, as hospitals would "game the system" by performing more surgeries in categories that were better remunerated and greatly expand their output.[43] A compromise solution may be to embed DRG awards within a hospital budget-holding approach following a points system as used by Austria (Docteur and Oxley, 2003), effectively allowing DRG payments to be scaled, while retaining initial relativities, so as to fit under the aggregate budget envelope. As the DRG prices are national averages, individual hospitals should be rigorously compared and benchmarked for relative cost efficiency; publication of such results, in addition to track records of types of surgery performed and rates of complications would strengthen reputational efficiency incentives (as seen in England). Hospital doctors' pay should be determined within the budget envelope set by the output-based payment system, rather than by national-level bargaining as at present. This might also imply salary plus pay-for-performance or output contracts for specialists.

Physician fees

Capitation payments should incentivise doctors to keep their patients in good health so as to minimise their own burden, solving the problem of "supplier induced demand" (SID) under fee for service.[44] Capitation, however, does a poor job in motivating physician effort, notably the time and attentiveness the doctor accords a patient, which may be the main determinant of the effectiveness of diagnosis and treatment strategy. The emerging consensus is toward a so-called blended payment system which would include capitation, incentive payments based on quality thresholds or targets, fees for particular services that are underprovided (notably preventive services) and some infrastructure payments. The underlying theory is that some mixture of both capitation and fee for service can combine the best – or equivalently, avoid the worst[45] – of both payment methods, hence the key rationale for the capitation/fee-for-service blend is a diminished incentive to oversupply services but an enhanced one to exert effort. The "optimal" weight to be placed on each method depends on relative marginal utility with respect to each of the physician's two objectives – patient welfare and earnings – which is not observable (McGuire, 2008). But intuition suggests that the more doctors care about earnings, the more risky it might be to rely too heavily on capitation.[46] It is also important in the NZ primary-care context to establish who pays what. If the patient pays the fee-for-service element in the current manner, this is not the same as a single payer devising a blended payment system to balance incentives of each method but rather a "back pocket" that the GP can raid when things get too tough in the public payment system.

Under the PHCS, public funding of primary care, in the form of capitation payments, has greatly increased as a proportion of general practice revenue. It has been estimated that for the majority of practices, capitation now forms between 60 and 80% of revenue for primary care services (report by LECG cited in Mays and Blick, 2008). As noted, doctors continued to increase their fees, partly frustrating the goal of the strategy.[47] To reduce risk and assure quality among providers, the capitation weight should be allowed to drift downward over time, with subsidies applied to rising fees at the patient level.[48] By comparison, Australia has a 10% capitation share for primary care physicians plus target payments for immunisations, with the remainder mostly fee for service; Norway and Denmark both have around 30% capitation/70% fee-for-service shares. The United Kingdom, Sweden and Spain on the other hand pay GPs by majority capitation and/or salary. Most others continue to pay private primary care physicians on a primarily or exclusively fee-for-service basis (Simoens and Hurst, 2006).

Another idea now in vogue is physician pay-for-performance (PfP) top-ups, presumably to reward quality, which is poorly captured by the other two payment methods. Here the evidence is somewhat ambiguous, as two negative effects are possible: gaming the system (as with DRGs) including the turning away of high-risk patients and, more seriously, the blunting of intrinsic motivation.[49] Another recurring problem is that objective measures of quality are hard to develop. The 1990s reform experience suggests that NZ doctors are highly motivated and value their professional image and independence. Therefore, monetary rewards for meeting targets should probably not assume a major role in their compensation. That said, a well-designed payment for performance contract at the practice level is a potentially useful addition to a basic mixed payment system.[50] This is not to be confused with an appropriate role for rewards/sanctions on budget holders (DHBs and PHOs), as recommended above.

Private burden sharing

Another way of coping with health-care spending pressures could be to increase the share of private financing. Private cost sharing, insofar as it succeeds in displacing public spending, reduces the deadweight loss of taxes and supports fiscal sustainability. It could theoretically enhance the price-sensitivity of demand and generate more contestability of public provision through private entry funded by private insurance, in turn improving efficiency, though evidence it has done so in other jurisdictions is scant. On the downside, it may have inequitable impacts on service accessibility and quality, and by extension, health outcomes as between private and public insurance coverage. The main users of health services are older retirees with multiple long-term conditions unlikely to be able to afford private coverage.[51]

Co-payments

Fixed co-payments for care fall disproportionately on the poor, and so are regressive. Looking at costs and benefits over the life cycle can change relative notions of progressivity, though. The rich and educated tend not only to live longer, but also to use primary preventive health care, costly specialist services (*i.e.* electives) and high-tech medical procedures more intensively than do lower-income people (Glied, 2008a). Co-payments can redress such imbalances by making heavy users pay, while also restraining their demand. The recent across-the-board reductions in co-payments have improved financial access for the poor, but at the cost of distortive taxes to pay for increased subsidies to rich and poor alike. However, since co-payments seem to deter effective and ineffective treatment and care about equally, they should not be too large either. Hence, it seems desirable to keep some modest level of co-payments in the system, as indeed seemed to be the policy of the previous government.[52]

Access issues may be best addressed by targeted rather than general subsidies. The risk, however, is that of too many exemptions (Docteur and Oxley, 2003), and of high marginal effective tax rates as targeted benefits are withdrawn. Since hospital care is normally excluded from any co-payment obligation whatsoever (in the 1990s, an attempt to impose them in New Zealand was resoundingly rejected by the public), but accounts for the lion's share of health-care expenses, such a rule is unlikely to be observed in practice in any event. The unplanned use of hospitals – which tends to be the most costly – also tends to be strongly associated with poorer people. Furthermore, rising hospital emergency-room use, despite lower primary-care co-payments, suggests non-financial barriers to access for the poor, though it is also the case that GP out-of-hours clinics are run separately from general practices and still charge sizeable co-payments. These non-financial barriers may reflect inadequate primary-care services in certain locations or at certain times, closing of general practice patient lists, lifestyle or awareness issues, all of which merit policy attention.

Private health insurance (PHI)

PHI, like co-payments, holds the promise of market-like benefits but also carries risks of non-negligible costs (Box 3.5). Competition among multiple insurers should enforce efficiency gains and build needed system capacity. Individual cost-sharing should foster greater responsibility and conscientious use of services. However, PHI interactions with public insurance often lead to more, not less, rent-seeking, pushing up overall health spending. Hence, PHI should not be seen as a panacea for achieving cost containment within

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the health system – which is best achieved by other means (Colombo and Tapay, 2004). Yet, health-system responsiveness and quality seem to be higher in mixed systems. A well regulated system of PHI could conceivably help to address long-run challenges.

In New Zealand, the share of the population purchasing PHI is rather high (one-third), and even rising,[53] suggesting that users are willing to pay more to get better access, potentially better quality and new services.[54] Still, PHI accounts for a rather small share of total health financing, having fallen from 6.8% in 1997 to 5.2% in 2002, despite few regulatory constraints on PHI, though earlier tax benefits for employer purchases of PHI were discontinued. It is also mainly a historic legacy of people insuring themselves against the cost of GP fees, which have now fallen radically. Policy makers should consider if private insurance should play a bigger role over the long run, while assessing to what extent the public sector can keep expanding coverage without creating quality gaps. Australia may provide interesting lessons for its trans-Tasman neighbour, regarding the benefits of a mixed system, possible regulations and tax treatment as well as costly pitfalls to avoid (Box 3.5). For instance, it may be possible to recoup richer citizens' burden sharing (given reduced co-payments) by imposing income-tested social charges for public insurance unless a minimum package of PHI coverage is purchased. Tax subsidies for PHI, however, may be quite expensive. Public guarantees to high-risk groups should be circumscribed and conditioned to avoid profitable risk selection by PHI providers.

Box 3.5. **Benefits and risks of PHI**

Governments have often looked to private health insurance (PHI) as a means of addressing health-system challenges. In the experience of some OECD countries with significant PHI alongside universal public insurance systems, there have been major benefits to health-system efficiency and performance but often at an elevated risk of equity and fiscal costs. It is of course up to each country to choose its location on the equity-efficiency frontier.

Benefits

Driven by the profit motive (or budget holding), competing insurers can cater to clients' diverse needs in their product design and responsiveness, improving consumer choice in contrast to bureaucratic rigidity, while putting pressure on health-care service providers to minimise costs, enhancing system efficiency. PHI can take pressure off the public system both in terms of system capacity and financial burden. Competition among multiple insurers has tended to promote innovation, especially in the hospital sector, where faster rates of technology diffusion offer gains of higher intensity of treatments, though such investments can have rapidly diminishing marginal returns and need careful assessment of value for money (Colombo and Tapay, 2004). Nonetheless, because of severe information asymmetries in the health-care market, competition in other ways may be slow to take off. Monopsony power of the single payer could be diluted in the presence of competing private insurers, which would raise health-care prices; but insofar as this would call forth greater supply, it could still be welfare enhancing (Glied, 2008b). Competition can develop around risk selection and rent seeking rather than upon service, quality and efficiency, while higher administrative costs in the private than in the public sectors can diminish net benefits (see the Australia example below); this probably requires limits to the government guarantees to high-risk groups in the extent of service coverage in the public benefit package.

Box 3.5. **Benefits and risks of PHI** *(cont.)*

Risks

PHI can be inequitable in ways that require regulatory vigilance. Risk-adjusted premiums and pre-existing conditions clauses under PHI punish the sick (who are also often poor). Countries like Australia for this reason require community rating and open access to PHI. Some countries (United States, Australia, Canada, Denmark, France) give favourable tax treatment to employer-sponsored PHI premiums, which is particularly regressive (Glied, 2008a). But despite the obvious merits of PHI, subsidising it may be hard to justify in the presence of unintended effects on public insurance. Private insurance that is complementary to public insurance has been shown to increase the demand for the publicly funded services (*e.g.* private cover for pharmaceuticals that increases the demand for publicly subsidised doctors' visits in order to obtain prescriptions), exacerbating system moral hazard and fiscal cost (Glied, 2008a). Private insurance that is substitutable for public insurance can be used to "skip the queue" in countries like New Zealand and the United Kingdom with strong single payers that ration free public services. However, this only lengthens waiting times for those without insurance, can easily be construed as unfair and provokes general dissatisfaction with the system, to which policy makers are increasingly sensitive (Docteur and Oxley, 2003).

In the extreme, with fully competing public and private schemes, cream skimming and adverse selection could bid all the good risks into private insurance, leaving the high-risk individuals to the public sector. A dual health-care delivery system could arise with high quality in the privately funded part and poor quality in the public part. Systems like Canada's or the US old-age Medicare programme prohibit the purchase of private cover for publicly provided services, and Australia's does so for out-of-hospital medical services, presumably for such reasons, yet often stand accused of restricting patient choice (*e.g.* the highly controversial Chaoulli court decision to allow PHI purchase for publicly insured services in Quebec, Canada). Taxing premium payments for private insurance, so as to internalise such negative externalities on public insurance, could avoid the welfare losses of outright prohibition (Glied, 2008b), but it has never been tried, probably for fear of exacerbating inequalities. Other approaches have created "firewalls" between the two sectors, such as Germany and Netherlands which mandate or encourage private coverage above a certain income. An alternative way to extract burden sharing from richer citizens would be to make them pay a premium for public insurance, as in Australia (higher-income earners must purchase PHI or pay a 1% surcharge over the standard 1½ per cent Medicare Levy). Another possibility may lie in restricting public coverage to a basic yet adequate care package, with optional private coverage for all services providing further, more marginal benefits, building on the vaunted 1980s "Oregon model" of hard choices. However, attempts to define such an "essential" public package have usually met with failure (Docteur and Oxley, 2003), including in New Zealand in the past (Ashton, 2009).

The Australian experience

Policy makers in Australia have keenly promoted a private health-financing and -delivery system alternative to Medicare (the public scheme), with the aim of improving competition and efficiency in health care while maintaining a sustainable public health sector (Colombo and Tapay, 2003). Indeed, PHI in Australia enables choice of provider and of level of care, channels finance to private hospital providers, promotes system responsiveness by taking pressure off public hospitals, especially for elective surgery, and generally works well in tandem with complementary public coverage for hospital care. Clearly, there are costs as well. Despite the regulations to ensure equity of access and

Box 3.5. **Benefits and risks of PHI** *(cont.)*

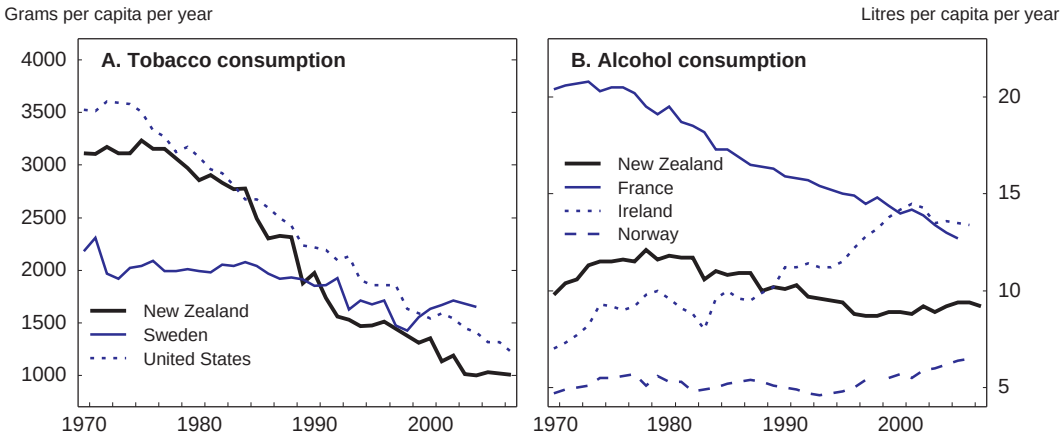
financing of private coverage, insurers can get around these by means of clever product differentiation, and further regulations and tax expenditures have been needed to offset these unintended effects. In particular, public reinsurance of high-risk cases to alleviate adverse selection may have reduced private-sector incentives to be cost-efficient in treatment. Administrative costs also tend to be much higher in the private sector. Tax rebates for 30% of PHI premium payments are expensive, and, even though progressive in structure, they tend to benefit higher-income households who purchase more PHI. Private paying patients in public hospitals may get preferential access and higher treatment quality, given the extra funding that they bring, despite regulatory safeguards. As PHI cannot cover primary care, private insurers are not exposed to the risk of managing the entire continuum of care, implying weakened incentives for cost control and potentially higher aggregate health-care demand.

Prevention as the best medicine

Incentives matter also for the non-health-care determinants of health outcomes (Cawley, 2008). Even advanced medical care may be largely palliative, prolonging years of disabled life. Preventing adverse health conditions from arising in the first place, especially those traceable to unhealthy lifestyles and addictions, rather than ageing *per se*, could improve life quality and avert substantial health-care expense in the future. These savings are augmented by often substantial negative externalities (secondary smoke, drunk driving, family care, etc.). As seen, the budget-allocation process places a high priority on prevention and public health services. Harmful behaviours are being tackled by public health awareness campaigns, taxes and regulations. There have been some encouraging results. Tobacco consumption has dropped sharply from high levels, while alcohol consumption declined up until about a decade ago (Figure 3.12).[55] Obesity rates, on the other hand, have risen markedly in New Zealand as in other countries (Figure 3.13). Obesity, smoking and alcoholism all tend to afflict the poor in affluent countries disproportionately; in New Zealand, the minority Maori and Pacific Islanders are especially

Figure 3.12. **Tobacco and alcohol consumption**

People aged 15 and over

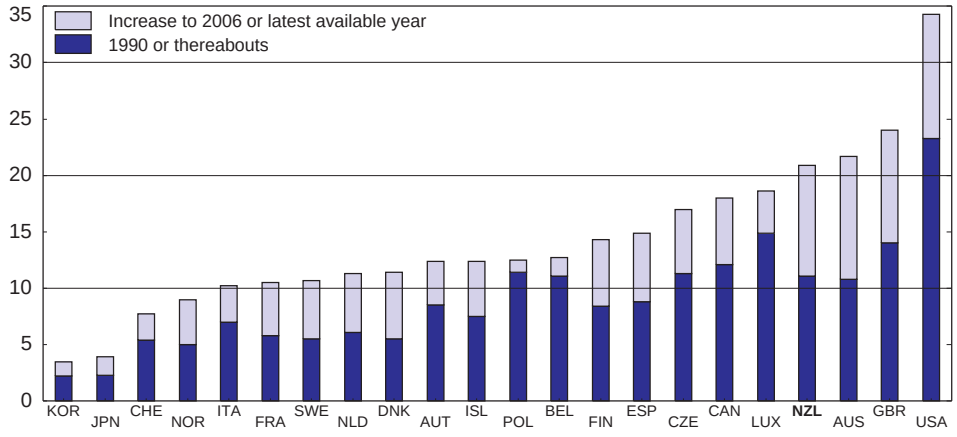


StatLink http://dx.doi.org/10.1787/563218128270

Source: OECD, *Health Data 2008*.

Figure 3.13. **Obesity rates among the adult population**

As a percentage of total population



StatLink http://dx.doi.org/10.1787/563286354508

Source: OECD, *Health Data 2008*

vulnerable (see Table 3.3). The high probability of developing chronic diseases among these groups suggests a trend toward intensifying inequality of health outcomes, in stark opposition to national objectives and requiring a response.

Though the case for pre-emptive actions – notably to encourage healthy lifestyles by information and education or to discourage unhealthy ones by taxes and prohibitions – seems compelling, the proposition that prevention is preferable to cure needs to be carefully evaluated for each policy intervention. Spending for treatments is by definition well targeted, going to the clearly sick person (abstracting from moral hazard), whereas prevention is not, *i.e.* implying possibly large deadweight losses from spending that either fails to change behaviour or does not need to. Moreover, the gains from prevention are often delayed far into the future, which is normally discounted, whereas treatment benefits are immediate. Thus, it is quite possible to overspend for prevention relative to cure. It is even possible to decrease social welfare by an overbearing "nanny state" that does not sufficiently respect individual choices among multiple conflicting objectives, of which health is only one.

The OECD project on the economics of prevention (Sassi and Hurst, 2008) proposed a framework for conducting rigorous cost-effectiveness evaluations (*e.g.* QALYs per dollar spent) of pre-emptive measures. It suggested that interventions will usually be justified where there are clear market, information or rationality failures, notably in the following three cases: *i*) vulnerable populations lacking the maturity or educational/social skills to cope with adverse social and environmental influences and unable to take advantage of what the health system has to offer (*e.g.* children and disadvantaged populations); *ii*) people who acknowledge their addictions (hyperbolic discounters) and want the state to help them achieve better self-control through various incentives and encouragements; and *iii*) public policies fostering public health menaces, such as US subsidies to corn (leading to heavy use of corn syrup in processed foods), transport and urban planning that prevent physical activity and create slums; and industrial and competition policies allowing lifestyle goods industries to have undue influence *via* advertising and increasing market shares. Other factors responsible for adverse lifestyles may be justified by dynamic welfare gains and should not be the subject of health-care prevention policies, notably changes in

working conditions due to globalisation, technology and the like (sedentary work, increased participation of women, increased stress and job insecurity, and longer working hours).

Conclusions

New Zealand's health-care system is comparatively efficient thanks to strong top-down budget control, yet policy makers are right not to be complacent. As elsewhere in the OECD, a "toxic" mix of rising chronic conditions, rampant technological progress (not all of which stands up to cost-effectiveness scrutiny) and rising public expectations poses serious issues of long-run fiscal affordability. The New Zealand Health and Disability Strategy appears to point in the right direction. It attempts to overturn the old approach of mainly treating illness rather than promoting wellness. It establishes the vision of a new health-care delivery model that reduces cost yet improves quality and accessibility, notably by providing a continuum of care that follows patients as they go through an integrated system making better use of IT. This is obviously a highly innovative and gradual process. Fiscal costs associated with establishing the new institutional framework have been high, while many of the stated policy objectives remain elusive, and actions by various health market actors did not always follow the intended script. The next steps in health-care reform will need to address the major shortcomings of the framework, and the new government has promised to do as much. The arguments developed in this chapter give some pointers for further reform of health care, with the following key issues emerging (Box 3.6):

- *Priority setting* by funders and purchasers (the MoH and DHBs) based on an economic approach, notably QALYs gained per dollar spent for alternative expenditures, will be crucial for getting best value for money out of scarce health-care resources, and it will require good information and expertise. Government and society will have to make clear choices between prevention and cure, core services and new technologies, public *versus* private finance, etc. And, even if in the real world other criteria are taken into account, this should be the starting point.
- *Accountable contractual relationships* between funders and purchasers will require granting autonomy to lower levels to manage budgets in line with local priorities and responsibility for results, with roles and obligations clearly specified and a few key performance indicators rigorously monitored but not annually renegotiated. Rewards/sanctions could be designed for promoting national priorities such as integrated service models.
- *Behavioural incentives* to providers that lead to fulfilment of policy goals will require *a*) finding the optimal mix of fixed and variable payments in primary care in order to get the right balance between efficiency, prevention and quality and *b*) implementing standard-cost hospital payments in order to encourage efficiency and innovation by means of a quasi-profit motive, while also contracting for service volumes *ex ante*, all within a budget envelope.
- *What role for private insurance?* Ideally, a PHI pillar could enhance both fiscal sustainability and health-system performance, by way of private responsibility and cost sharing and insurer-spurred competition. But pitfalls regarding equity and unexpected fiscal costs would need to be avoided by careful regulation and tax treatment of PHI. Hence, the recommendation at this stage is to give this option further study rather than acting now.

Box 3.6. **Recommendations for health-care reform**

Draw sharper lines of responsibility between Ministry of Health and its devolved purchasers, DHBs and PHOs:

- Give sufficient spending autonomy to DHBs, including responsibility for maternity and disability spending. Decentralise wage bargaining to allow flexibility by DHBs to innovate.
- Reassess and clarify the role of PHOs. Assure sufficient scale to allow risk pooling at the PHO rather than at the individual-practice level and develop its insurance/ single-purchaser function.

The Ministry should focus on priority setting and information needs:

- Allocate Vote: Health according to economic criteria, emulating Pharmac's approach of examining opportunity costs (*e.g.* in terms of QALYs gained) of alternative allocations of the marginal health-care dollar; wider budget allocations should take health objectives into account, *e.g.* devoting more education resources to alleviating looming health-care manpower shortages.
- Disseminate best practice information to clinicians, develop performance indicators, monitor DHB provider arm (public hospital) performance to stimulate benchmark competition and improve consumer choice;

Enhance competition among providers and purchasers (recovering some positive elements of past reforms):

- Evaluate whether government ownership of public hospitals, or at a minimum outsourcing of hospital management to an independent regional- or national-level agency, might help resolve DHB conflicts of interest and stimulate cost consciousness, efficiency and competition, and rational capital planning in the hospital sector.
- Develop accountable contractual relationships across levels *via* risk sharing/ conditionality/ simple rewards (as for example in England's NHS, where purchaser-provider contracts have been established in general practice and payment for performance is about to be introduced for hospitals). Develop incentives in PHO budgets to promote multi-disciplinary community clinics to serve populations with chronic conditions and special needs.
- Allow capitation payment to better "follow the patient", eliminating restrictions on access to such payments by individual physicians and practices, *i.e.* PHO membership, to encourage PHOs to compete with one another in the same areas for patient enrolments and GP affiliations.
- Consider a role for wider private health-insurance coverage, with appropriate regulation and or taxation, to help spur competition amongst insurers in support of efficient, innovative and responsive health-care markets.

Design payment schemes that optimise efficiency/quality trade-offs:

- Think carefully about the proportions of GP reimbursement paid in different ways, reducing that for capitation, while keeping a modest level of out-of-pocket fees. Too high a share of capitation makes practices vulnerable to risk, higher co-payment by the sick and rents for luckier practices. Fees should be set by the PHO in line with budget holding obligations, levied by the practice on the patient with full or partial reimbursement by the DHB (funder) contingent on patient income.
- Consider social premiums or private insurance obligations for richer citizens to recoup financial burden sharing lost by co-payment reductions, even though they are not relatively high users given the distribution of morbidity.
- Embed DRG payments within a hospital budget-holding approach following a points system as used by Austria (where the absolute but not relative value of the DRG reimbursement is set by the overall budget envelope). Individual hospitals should be rigorously compared and benchmarked for relative cost efficiency; with publication of such results, in addition to track records of types of surgery performed and rates of complications, to motivate efficiency savings and innovation. Hospital doctors' salaries should be determined within the budget envelope set by the output-based payment system, with possibility of modest top-ups for performance to reward quality, and/or fee for service to reward output/productivity.

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Notes

1. Publicly-funded elective care must be accessed (and prioritised) through the GP network, and the patient is allocated to a specialist – based on that GP's referral practice (in many regions there may be little/no choice of specialist). However, there is nothing to prevent patients travelling to other regions for specialist care, if they choose to do so. If patients can privately finance their elective care (out-of-pocket or via insurance), they may have a choice if there are multiple privately practicing specialists.
2. Disability services were traditionally funded by the Ministry of Social Affairs and health care by the Ministry of Health, which gave rise to co-ordination issues. Recently, disability and health care have both been administered by the Minister of Health.
3. It should be noted that increasing life expectancy does not necessarily mean that people are living more years *in* old age; the "natural" end to life has not been extended greatly by medical advances. What it means rather is that more people survive *into* old age because of reduced mortality at lower ages. This may make the assumption of healthy ageing a bit more tenuous, however. See Bryant *et al*. (2004).
4. Private as well as public health spending enter the "health production function", as both contribute to the same outcome. However, private spending is a small part of the total and is strongly influenced by public regulations.
5. According to Glied (2008a), a dollar spent on education in OECD countries is far more potent in promoting good health than a dollar spent on health care.
6. In a panel regression across OECD countries, efficiency falls out as the residual factor after controlling for health care and other measurable factors such as dietary habits, smoking, education, pollution and per capita income, all of which affect population health status, represented by life expectancy at birth. This is similar to the method used to estimate economic efficiency (total factor productivity). A welcome result is that health spending is indeed a major contributor to health in the OECD countries. Another is that New Zealand (along with Iceland and Australia) is at the efficient health spending frontier. A caveat is that not all determinants of health outcomes could be included in the regressions, and the resulting specification error may bias the measure of efficiency. See Joumard *et al*. (2008).
7. Over the past decade, public hospital case-weighted discharge rates (a common measure of the volume of hospital output) have grown by almost 20% (Raymont, 2008).
8. It should be noted that since devolution of health to the four countries of the United Kingdom, there has been marked divergence of policy and systems particularly between England and Scotland.
9. OECD estimates (Simoens and Hurst, 2006) show a significant positive association between GP density and the annual number of GP visits. Whether this is due to higher demand for services because doctors may spend more time with patients or charge less, or to supply-led demand as doctors try to generate more business for themselves, is unknown. Higher densities of physicians are also associated with better health outcomes and responsiveness across countries, including shorter waiting times for elective surgery.
10. In a cross-country survey, 25% of sick adults claimed to be the victims of medical errors in the last two years in New Zealand, compared with 22% in the United Kingdom, 23% in Germany, 27% in Australia, 40% in Canada and 34% in the United States. However, 31% of NZ patients and 33% of US patients said that prior medications were not reviewed at discharge, all other countries having lower reported failure rates (Commonwealth Fund International Health Policy Survey of Sicker Adults, 13 November 2005). Reducing errors may therefore often be a simple matter of following established procedures and making checklists, with team-member backup checks, of elementary safety steps by medical personnel to follow.
11. Such a long-run projection exercise is required by law to be undertaken and published at least every four years (Treasury, 2006). Because of the dramatic deterioration of the medium-term fiscal situation, the next update will already be undertaken later in 2009.
12. The post-war baby boomers started to enter the workforce in the mid-1960s and then gained in experience and skill, reducing the dependency ratio and boosting growth (though they will soon start to retire).
13. Cost data by age group is not available for New Zealand, but research from the United States suggests that around 50% of lifetime health-care spending occurs in the last year of life.

14. The pooled elasticity of real health care expenditures per capita with respect to real GDP per capita for a panel of 30 OECD countries is estimated at 1.15 (and once adjusted for age, at 1), over an estimation period of 1970-2002 (OECD, 2006); the corresponding time series estimate for the income elasticity of demand for New Zealand is 1.16 over an estimation period of 1951-2005 (Treasury, 2006).

15. In developing countries, the causation is often thought to go the other way, as improving health through disease eradication raises rates of infant survival, children's school attendance and performance, and adult labour force participation and productivity. However, the link by itself is long-lagged and relatively weak, which may reflect the fact that complementary policies are needed to get the full benefits on income growth, notably to ease resource constraints on faster population growth. See Ashraf, Lester and Weil (2008).

16. This assumes essentially price-inelastic demand. If demand were price-elastic, a higher relative price of health care would lower total health spending, both absolutely and in relation to GDP.

17. Health-specific PPPs have drawbacks. They are based on prices for market outputs, which may not be very relevant for New Zealand where the public sector is responsible for a large share of outputs. And for some services, outputs are calculated on the basis of inputs assuming the same productivity across countries, which is a debatable assumption. On another measure, the increase in the health and community services component on the consumer price index has exceeded the economy-wide annual change in this index by an average of 0.7 percentage point per year since 2002.

18. Compared to acute care, long-term care is more exposed to competitive pressures, given its low-skill nature and greater ease of private entry, underlying its much lower price inflation despite higher volume growth.

19. The long-run average per capita GDP growth assumption is 1.5% in the Treasury projections as against 1.8% in the OECD projections.

20. A Christchurch study examining the relationship between primary and secondary care showed that in one large local health centre registered patients with chronic diseases (High User Health Card holders) accounted for less than 9% of all health-care users but 42% of hospital services. See Malcolm (2007).

21. According to a 2007 study, integrated systems like Kaiser Permanente's (a large Health Maintenance Organisation, or HMO, in California) provide 22% greater cost efficiency than competing systems (J. Rae-Dupree, "Distruptive Innovation, Applied to Health Care", *The New York Times*, 1 February 2009). Sochalski *et al.* (2009) find that multi-disciplinary provider teams with in-person (*i.e.* not telephone) communication lead to significantly fewer hospital readmissions for people with heart failure.

22. There have been recent scandals involving grave medical errors in specialised clinics located in rural areas where the number of specialists (*e.g.* in neurosurgery) had fallen to as low as 1 or 2 as the population had also shrunk due to out-migration to cities.

23. Allowing nurses to prescribe in highly specific circumstances was instituted in 2003, and it would be desirable that this trend go much further by a fundamental change in regulations regarding the division of labour.

24. Projection scenarios by NZIER (2004) suggest an imbalance, depending on the assumptions, of demand over supply for health professionals of between 28% and 42% of the 2001 health-care workforce in 2021.

25. In some specialties such as in vascular, paediatric or neurosurgery, there are no more than 20 specialists registered, and only five in breast medicine, 12 in rehabilitation medicine and 13 in oral and maxillofacial surgery (Zurn and Dumont, 2008).

26. For example, MoH and DHBs should contribute to international recruitment policies by specifying their needs in the occupational shortage lists; the points system for immigrants settling outside Auckland should allow for greater regional variations; and bilateral agreements with the Pacific Islands for visitor programmes to supply the many low-skill workers that will be needed in the long-term care industry should be established, along with training programmes (Zurn and Dumont, 2008).

27. The maternity budget is inexplicably large, despite more intensive use of midwives than elsewhere in the OECD, while not preventing high rates of complications among newborns. According to *OECD Health at a Glance*, 2007, conditions originating in the perinatal period are in the 90th percentile of the OECD while congenital malformations, deformations and chromosomal

abnormalities are among the highest in the OECD. This may however explain a high *ex ante* need for maternity spending.

28. US managed care organisations are also often simultaneously purchasers and providers; however, there is countervailing competition among insurers. Also, such purchaser-providers rarely own hospitals.

29. There is a national points system to determine who gets elective surgery, and so the notion of returning patients to their GPs for "watchful waiting" if they do not reach the threshold is well understood.

30. For example, Otago DHB and Southland DHB established a shared regional Executive Management Team in 2007, with a joint CEO appointed in 2008. Joint teams are working across the service planning and funding functions, as well as the 'back office' areas of finance, information systems, procurement, and human resources. The DHBs are collaborating on joint services, for example, blood and cancer services (reference: *www.healthdownsouth.co.nz/index.php?pageLoad=53*). Also, in 2008 the six Central Region DHBs (lower North Island) jointly released a draft Regional Clinical Services Plan for the delivery of secondary and tertiary hospital services in the Central Region over the next 10 to 15 years. The purpose is to provide direction about the services that will be provided, propose a joint decision making framework, and to promote debate about the plan (reference: *www.rcsp.org.nz/Home-0.html*).

31. Additional public funding primarily aimed at reducing patient out-of-pocket fees (co-payments) for general practice consultations and pharmaceuticals in a phased manner, starting with PHOs serving deprived and/or higher-need populations as of October 2003 (Access PHOs) and by 1 July 2007 extended universally to PHOs serving the rest of the population (Interim PHOs) by progressive gradations of age, from youngest to oldest to prime-age groups. Another lever was support for the development of services by Maori and Pacific Island providers.

32. Fees are in principle regulated by a committee of DHBs: any fee increase beyond a "reasonable" level, as defined by Future Funding Track inflation (*i.e.* that which would maintain the purchasing power of Vote: Health), must be approved by the committee. So far, however, most increases have been approved.

33. An interesting counterfactual can be seen in the DHBs' relationships with pharmacies, another type of primary health-care provider. The DHBs collectively contract with the pharmacies' organisation for their entire pharmaceuticals needs. The types of services to be provided and allowable prices to be charged by the pharmacies are all carefully specified in the contracts. The result is no cost overruns and gradual structural change in the pharmacy market induced by the DHBs' power to influence price. See Mays and Blick (2008).

34. There are media reports of GPs in some areas closing their patient lists, restricting enrolments to, for example, family members of existing patients or else high-needs patients. This is partly driven by an under-supply of GPs in rural areas, although 'overworked' GPs in some urban areas have also closed their books to new patients. (References: *www.nzdoctor.co.nz/news?article=814f1160-1444-44e4-8ea4-e1d0874c8174* and *www.nzherald.co.nz/health/news/article.cfm?c_id=204&objectid=10546483*).

35. Strategies like reference pricing and cross-product bundling arrangements are also used by Pharmac. Reference list pricing means that drugs in the same therapeutic group are all subsidised at the level of the lowest price in the group; if companies want to charge a higher price, then the consumer must pay the difference. This stimulates price competition to gain market share. In a cross-product arrangement, a company agrees to lower its reference price for a drug in one therapeutic category in exchange for Pharmac agreeing to list another drug produced by the company in another therapeutic grouping.

36. The Pharmaceuticals Industry Taskforce claims that in the six years to 2006, Australia subsidised 78 new innovative medicines, of which 72 were registered in New Zealand. However, New Zealand chose to subsidise only 20 of them (Ashton, 2009).

37. The case in point was Pharmac's 2008 decision to allow public insurance to reimburse only nine weeks' of treatment of an expensive new breast cancer drug (Herceptin) – whereas 30 countries are funding a 12-month regime – on the basis of one trial (among many) that showed that nine weeks did not deliver much less benefit than 12 months, the manufacturer's recommended dose. There was a loud outcry from consumers and disease interest groups putting pressure on Pharmac to reconsider, including a judicial review. However, the previous government stood firm (Ashton and Wells, 2008). The new government, on the other hand, as part of its 100-day programme decided to fund 12 months of Herceptin treatment by special funding outside Pharmac's budget (Ryall, 2008).

38. This is an interesting difference from England. According to NZ public-sector management principles the ministry can only replace and directly influence the governance board, and since in the NZ system senior managers never serve as executive directors on boards, the ministry in this case cannot currently do what happens in England.

39. There is little evidence, however, that consumers act on such information if they receive it, normally preferring to choose hospitals close to their home and deferring to their treating doctor's choice of hospital and surgeon. The main effect is on managers and senior clinicians who wish to defend their reputations.

40. Currently, the Ministry appears to allocate resources more on the basis of need than on the capacity to benefit. See Devlin and Hansen (2004).

41. The ten targets are (with accompanying quantitative targets not shown): improve immunisation coverage; improve oral health; improve elective services; reduce cancer treatment waiting times; reduce ambulatory-sensitive hospitable admissions; improve diabetes services; improve mental health services; improve nutrition, increase physical activity and reduce obesity; reduce harm caused by tobacco; and reduce the percentage of the health budget spent on the Ministry of Health. See Tenbensel (2007).

42. DRGs are designed to group similar cases and each has a weight based on the average cost of providing services, which is country-specific and must be frequently updated.

43. Norway solved the problem of waiting lists for elective surgery in its 2001 reform by instituting a DRG-based hospital reimbursement system, but at high cost. Re-classification of procedures in line with DRG groupings resulted in much faster growth of hospital services (Bibbee and Padrini, 2006).

44. Patient satisfaction and choice have tended to deteriorate under systems using capitation payment methods to control costs under either budget holding or profit maximising. There may also be excessive referrals to external specialists and hospitals, though such risks have been mitigated in some US HMOs, which share some of the cost of hospital referrals.

45. According to Robinson's (2001) seminal article: "Fee-for-service rewards the provision of inappropriate services, the fraudulent up-coding of visits and procedures, and the churning of 'ping-pong' referrals among specialists. Capitation rewards the denial of appropriate services, the dumping of the chronically ill, and a narrow scope of practice that refers out every time-consuming patient".

46. Another factor to consider is that primary-care doctors, unlike hospital doctors or specialists, or indeed any other professionals, face high dependence on unpredictable variations in individuals' demand for services, with such risks being serially correlated due to repeated contacts with the same people (Howell, 2007a). Fee for service obviates serious financial risks to doctors under these circumstances, whereas capitation leaves them exposed.

47. According to Howell (2007a), the "dumping" of patients on hospital waiting lists back onto primary-care providers may have contributed to this problem as resulting primary-care cost increases had to be passed through into fees, the more so as their proportion in total pay had shrunk. The PHO, as the natural locus of risk pooling, should instead design balanced payment contracts based upon the *actual* demand each provider faces, and the extent to which financial risk-sharing can realistically control SID.

48. According to Howell (2007a), the ACC is probably the best template for the PHCS. It is a partially subsidised, population-based insurance and risk-management system, collecting premium top-ups (payroll taxes) to meet costs, providing care co-ordination and management and purchasing care from the same providers as the primary health-care system. Hence, having fixed annual fees by all patients on PHO lists has some advantages, which would be akin to social insurance premia and could be reduced for those on low incomes.

49. Some research has found that highly motivated doctors, who are the best performers to start with, have little to gain from PfP, especially if it is specified in terms of improvement (specifying absolute standards might discourage poor performers altogether), while the offer of monetary rewards itself devalues intrinsic motivation, perhaps even leading to worse performance (Golden and Sloan, 2008). However, this has not shown to be the case so far in experience of the United Kingdom (see next note).

50. The UK experience with its GPs is instructive given that they are culturally and economically very similar to NZ GPs in owning their own business. Take-up of the payments under the Quality and Outcomes Framework of the 2004 GP contract with the NHS has been enthusiastic and evidence of "gaming the system" has been modest, and most GPs support the areas targeted for performance

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payments. However, the UK PfPs may represent a kind of fee for service in that they reward outcomes as well as quality.

51. Some leading health economists contest the desirability of any user charges whatsoever. See Evans *et al*. (1993).

52. It is interesting to note that in the United Kingdom, Scotland and Wales are busy removing all co-pays from the NHS, and pressure is mounting on England to do the same.

53. Since 2002, there has also been a trend away from comprehensive health insurance towards elective surgical and specialist cover. See Health Funds Association of New Zealand, "Health Insurance Statistics December 2008", *http://www.healthfunds.org.nz/Statistics.asp*.

54. It is not a given that privately-financed care is of higher quality. See, for example, "Spotlight on safety in private hospitals", *ONE News*, 25 May 2008, *http://tvnz.co.nz/view/page/1796861*.

55. However, there is a festering problem with certain drug addictions (that for amphetamines is one of the highest in the world). The government is emphasising better law enforcement to address this problem.

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