OECD Economic Surveys
NEW ZEALAND

APRIL 2011



OECD

OECD Economic Surveys: New Zealand 2011



Please cite this publication as:
OECD (2011), *OECD Economic Surveys: New Zealand 2011*, OECD Publishing.
http://dx.doi.org/10.1787/eco_surveys-nzl-2011-en

ISBN 978-92-64-09316-4 (print)
ISBN 978-92-64-09317-1 (PDF)

Series: OECD Economic Surveys
ISSN 0376-6438 (print)
ISSN 1609-7513 (online)

OECD Economic Surveys: New Zealand
ISSN 1995-3100 (print)
ISSN 1999-0162 (online)

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Photo credits: Cover © iStockphoto.com/George Clerk.

Corrigenda to OECD publications may be found on line at: *www.oecd.org/publishing/corrigenda*.

© OECD 2011

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to *rights@oecd.org*. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at *info@copyright.com* or the Centre français d'exploitation du droit de copie (CFC) at *contact@cfcopies.com*.

Table of contents

Executive summary 9

Assessment and recommendations 11

Chapter 1. **Adjusting towards a sustainable growth path** 21
Macroeconomic developments 22
Monetary and fiscal policies 34
Structural factors behind macroeconomic imbalances 45
Policies to promote more balanced growth 48
Notes 53
Bibliography 54
Annex 1.A1. Progress in structural reforms 56

Chapter 2. **Policies to rebalance housing markets** 61
Features of the housing boom 62
The nature of housing demand 66
Are households' portfolios too concentrated in housing? 68
The role of favourable tax policies 71
The social housing sector 80
Reducing supply rigidities 82
Notes 90
Bibliography 90
Annex 2.A1. Housing-related taxation: Interest deductibility, imputed rent and capital gains tax 95

Chapter 3. **How to move product market regulation back towards the frontier** 99
New Zealand's long-run productivity performance continues to disappoint 101
The regulatory framework needs to be top notch 105
New Zealand's regulatory advantage has been eroded away 108
Policies to improve product market regulation 111
Notes 128
Bibliography 130

Chapter 4. **Green growth and climate change policies** 135
Green growth – a long-run competitive advantage 136
Sustainable development: growth within limits 137
Climate protection 148
Notes 164
Bibliography 166

Boxes

1.1. The Christchurch earthquakes . . . 27
1.2. Independent fiscal watchdogs: Lessons from the Swedish experience . . . 40
1.3. Recommendations for macroeconomic policies . . . 52
2.1. The effect of New Zealand's tax system on housing values . . . 74
2.2. Government assistance with home ownership . . . 76
2.3. Estimates of housing supply responsiveness . . . 83
2.4. Recommendations for the housing sector . . . 89
3.1. The cost of regulatory impediments to competition . . . 107
3.2. Regulatory governance in Australia . . . 117
3.3. Recommendations on how to move product market regulation back towards the frontier . . . 127
4.1. The 2009 (Phase I) RMA amendments . . . 138
4.2. Evolving NPSs and NESs for water . . . 142
4.3. Nutrient trading in the Lake Taupo area . . . 143
4.4. Untapped mineral wealth . . . 148
4.5. The NZ ETS . . . 154
4.6. Recommendations for greener growth . . . 163

Tables

1.1. Estimate of financial cost of the earthquakes . . . 27
1.2. Short-term economic outlook . . . 30
1.3. Components of labour input into NZ potential output growth . . . 33
1.4. Crown expenditure . . . 38
1.5. Public spending and net worth: Sustainable debt and historic trends . . . 43
1.6. Crown assets and liabilities . . . 44
1.7. Summary of tax changes in the 2010-11 budget . . . 51
2.1. Taxation of housing in New Zealand . . . 72
2.2. Long-run and short-run elasticities . . . 83
2.A1.1. Housing-related taxation: Interest deductibility, imputed rent and capital gains tax . . . 96
3.1. Labour productivity, MFP and capital deepening by sector . . . 105
3.2. Within-country variance of low-level PMR indicators, 1998 to 2008 . . . 110
4.1. Trends in gross GHG emissions, 1990-2008 . . . 152
4.2. Projections of net emissions and Kyoto accounts, 2008-12 . . . 152
4.3. Per cent of carbon costs incurred, by sector . . . 156

Figures

1.1. Recession and recovery compared with previous cycles . . . 23
1.2. External vulnerability . . . 24
1.3. Government debt and net foreign asset position . . . 25
1.4. Macroeconomic indicators . . . 26
1.5. Components of potential growth in New Zealand and Australia compared . . . 32
1.6. Inflation, two-year-ahead expectations and core inflation . . . 34
1.7. Net debt . . . 42
1.8. Net saving rates . . . 45
1.9. Investment rates . . . 46
1.10. Private-sector saving rates . . . 47

1.11. Effect of KiwiSaver 50
2.1. Housing price indexes across countries. 63
2.2. Housing price ratios 64
2.3. Lending by financial institutions to housing, business and agriculture 65
2.4. Household debt 65
2.5. Household indebtedness across income quintiles 66
2.6. Tenure structure across countries 66
2.7. Number and size of private dwellings 68
2.8. Financial and non-financial assets as a percentage of net disposable income . . 69
2.9. House prices relative to share prices 70
2.10. Real effective tax rates on different investment vehicles 73
2.11. NZ average local property taxes 79
2.12. Supply has fallen below long-run levels 84
2.13. Regional price-to-rent ratios 87
3.1. Real GDP per person 101
3.2. Gap in labour productivity *vis-à-vis* the United States. 102
3.3. The source of real income differences, 2009 103
3.4. ICT investment as a share of total economy non-residential investment 104
3.5. Multifactor productivity outcomes 104
3.6. Product market regulation and GDP per capita 107
3.7. Economy-wide product market regulation, 1998-2008 109
3.8. The overall PMR indicator and main sub-indicators, 2008 110
3.9. The regulation of network sectors 111
3.10. The barrier to entrepreneurship indicator and main sub-indicators, 2008 115
3.11. The state control indicator and main sub-indicators, 2008 120
3.12. Return on equity and dividend yield of the state-owned enterprises. 122
3.13. The barriers to trade and investment indicator and its sub-components, 2008 . 124
3.14. Policy heterogeneity *vis-à-vis* key trading partners 126
3.15. Export volumes 126
4.1. Water resource use 140
4.2. Selected agricultural indicators. 141
4.3. GHG-emissions intensity excluding LULUCF 149
4.4. GHG emissions profiles 150
4.5. GHG emissions in agriculture 151
4.6. New Zealand's projected emissions through 2050 153

This Survey *is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.*

The economic situation and policies of New Zealand were reviewed by the Committee on 15 March 2011. 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 29 March 2011.

The Secretariat's draft report was prepared for the Committee by Alexandra Bibbee, Calista Cheung and Paul Conway under the supervision of Peter Jarrett. Research assistance was provided by Françoise Correia.

The previous Survey *of New Zealand was issued in April 2009.*

This book has...



StatLinks

A service that delivers Excel® files from the printed page!

Look for the *StatLinks* at the bottom right-hand corner of the tables or graphs in this book. To download the matching Excel® spreadsheet, just type the link into your Internet browser, starting with the ***http://dx.doi.org*** prefix.
If you're reading the PDF e-book edition, and your PC is connected to the Internet, simply click on the link. You'll find *StatLinks* appearing in more OECD books.

BASIC STATISTICS OF NEW ZEALAND, 2010

THE LAND

Area (1 000 km^2)	267.7	Urban population,[1] percentage of total (30 June)	72.4
Percentage of total pasture and arable land, 2003	51.3	Population of major urban areas (30 June, 1 000 persons):	
		Auckland	1 354.9
		Wellington	389.7
		Christchurch	390.3

THE PEOPLE

Total resident population, 30 June (1 000)	4 367.8	Civilian employment (1 000)	2 180.3
Inhabitant per sq. km	16.3	*of which:*	
		Agriculture, forestry and fishing	149.2
		Manufacturing	247.5
		Trade (wholesale and retail)	440.3
		Education, health and social assistance	413.4

PARLIAMENT AND GOVERNMENT

Present composition of Parliament:		Present Government: National Party	
National Party	58	Next general election: November 2011	
Labour Party	43		
Green Party	9		
ACT New Zealand	5		
Māori Party	5		
Jim Anderson's Progressive	1		
United Future	1		

PRODUCTION

Gross Domestic Product (NZD millions)	194 629	GDP per capita (NZD)	44 560

FOREIGN TRADE

Main exports (percentage of total):		Main imports (percentage of total):	
Dairy products	23.8	Machinery and transport equipment	34.1
Meat and edible offal	11.5	Manufactures	17.0
Log, wood and wood products	6.8	Mineral, chemicals, plastic materials	31.3
Mechanical and electrical machinery and equipment	6.3	*of which:* Mineral fuels, total	15.3

THE CURRENCY

Monetary unit: New Zealand dollar		Currency unit per US dollar, average of daily figures:	
		Year 2010	1.3876
		March 2011	1.3488

1. Defined as the population in the 16 main urban areas.

Executive summary

Even before the latest severe earthquake in Christchurch, the expected gradual economic recovery in New Zealand was being held back by efforts by the private sector to reduce debt as well as a persistently strong currency. Active monetary stimulus and a significant fiscal expansion resulting from decisions taken prior to the global downturn supported the economy through the recession, as has buoyancy in Australia and Asia and large terms-of-trade gains. Households, businesses and farmers are attempting to repair over-extended balance sheets in the aftermath of a property boom. The balance sheets of the non-financial private sector deteriorated markedly as the increase in property prices and perceived wealth prompted additional household spending. The associated widening in the current account deficit was largely financed by bank-intermediated foreign credit, adding to already high external debt. Weak business investment and low national saving have for some time contributed to poor growth performance. Achieving faster growth will require progress across a broad policy front. This includes bolder fiscal consolidation in the form of spending restraint, coupled with tax and pension reforms to boost national saving. These measures would allow interest rates to stay low for longer and create room for the exchange rate to ease, thereby facilitating the needed rebalancing of the economy, boosting output of tradable goods and services.

Favourable tax treatment of housing and inefficient regulatory constraints on supply should be removed. These distortions exaggerated the surge in house prices, giving rise to wider wealth inequalities and a heavy dependence of households' long-term financial positions on volatile property values. The shallowness of capital markets that results from low national saving also contributes to the attractiveness of housing as a savings vehicle relative to financial assets. Despite the slump in housing demand, property prices remain at high levels relative to rents and average incomes, keeping affordability low for less affluent households and intensifying pressures on the social housing sector. While the government has made progress in addressing some tax distortions and inefficiencies in social housing delivery, policy priorities should include further tax reforms to level the playing field for saving and investment decisions, while improving the efficiency of land-use policies and the overall urban planning system.

Regaining regulatory best practice and improving management of the government's considerable asset holdings could help boost productivity growth. OECD indicators suggest that New Zealand's long-standing front-runner status in product market regulation has been eroded away over the past decade or so. Regulatory quality has deteriorated somewhat, and government ownership of economic assets has increased, in contrast to OECD-wide trends. Consequently, New Zealand is falling further behind in its ambition to catch up with OECD living standards, in particular Australia's, by 2025. Encouragingly, the government has taken action to strengthen the regulatory management system, and a Regulatory Responsibility Bill designed to improve accountability and transparency is

before Parliament. In addition, the government is considering, if re-elected, to partially privatise some key SOEs. Further steps should seek to fortify the regulatory governance framework in order to improve the overall investment environment. Continuing to enhance co-operation and regulatory harmonisation with Australian counterparts where appropriate would also reduce impediments to trade and competition.

Green growth would help to consolidate New Zealand's long-run growth potential. As an exporter of resource-based goods and services, notably dairy products and tourism, its "brand" relies on the environmental integrity of its output and policies. To this end, the country has begun to put in place one of the world's first and most comprehensive emissions trading schemes to fulfil its Kyoto obligations. However, mitigation possibilities are limited by the high share of hydro in its power generation and of agriculture in its overall GHG emissions. The carbon-price signal will need to be bolstered in order to encourage the greater uptake and discovery of clean technologies, although moves in this direction should be conditioned on progress towards a comprehensive international agreement. Market-based instruments to give natural assets a value should be used more broadly, notably to allocate water efficiently.

Assessment and recommendations

The recovery stalled in 2010, despite record terms of trade

New Zealand's economic recovery began promisingly in mid-2009, supported by unprecedented policy stimulus. The economy has benefited from growing trade linkages to China and other emerging markets in Asia, which suffered less from the international financial crisis and have rebounded more vigorously. Dairy and other food prices have surged as rising living standards in such populous markets have boosted demand, and droughts in producer nations, including New Zealand, have been more frequent. The country has likewise gained from its high degree of economic integration with a robust Australia. Even so, private domestic demand has failed to bounce back as quickly as in most previous recoveries, and little or no rebalancing has occurred. Growth lost momentum by the second half of 2010 as the global economy slowed and households and firms remained cautious with their spending. This, together with the impact of a strong earthquake that struck the Canterbury region in September 2010, contributed to stagnation in activity in the second half of the year. A second, more damaging earthquake in late February 2011, largely centred on Christchurch, New Zealand's second largest city, will further retard the recovery in 2011 and makes the outlook highly uncertain. The Rugby World Cup will provide a temporary boost to growth in the second half of the year and high commodity prices will also provide support, but previously expected earthquake reconstruction will be delayed and household spending will probably remain subdued for longer. Reconstruction (officially estimated at 8% of GDP) is projected to get fully underway in 2012 and provide a substantial boost to demand over a number of years. At the same time private investment and consumption should start to recover more surely, though needed fiscal consolidation will start to bite.

The recession has highlighted the need for structural reforms

Lacklustre growth reflects structural shortcomings of the NZ economy. As the 2000s progressed, the main sources of rising prosperity increasingly became commodity-based terms-of-trade improvements, credit-fuelled capital gains on property and rising government spending, rather than more enduring productivity increases based on investment and production in the traded-goods sectors. The economy now faces the challenge of a combination of high external deficits and international debt, an overvalued exchange rate, a heavy cost of capital and unbalanced growth. Following sharp setbacks in housing and farmland markets, an inevitable period of deleveraging began. Thus, the crisis

may have long-lasting macroeconomic repercussions, but it is to be hoped that this will spur structural reforms and behavioural changes that can secure a stronger foundation for sustainable long-run growth.

In that regard, the 2011 OECD *Going for Growth* cites the need to: ease barriers to competition in network industries and to foreign direct investment; reduce regulatory opacity; reverse educational under-achievement among the Maori and Pacific Islander populations; raise the effectiveness of public R&D support; and improve efficiency in the health-care sector. This *Survey* focuses on ways to improve product market regulation and competition (health-care reform was covered in the last *Survey*). It also has a detailed look at the housing sector, which is subject to inefficiencies in many OECD countries, and at environmental policy, where the government is making special efforts to assure long-term sustainability at minimum cost.

Recent interest-rate cuts will have to be reversed as resource pressures build

The Reserve Bank began to raise the official cash rate (OCR) in mid-2010 based on a relatively favourable economic outlook at that time, but it then appropriately paused as the recovery faltered. It also signalled that normalisation of the OCR would likely be more gradual and its end point would be lower than in previous tightening cycles. Following the second earthquake the Bank decided to lower the official rate by ½ percentage point as a precautionary move to limit the risk of a nation-wide decline in private confidence. While the scale and timing of the rebuilding effort remains highly uncertain, *the Reserve Bank will have to reverse that reduction as reconstruction activity gathers momentum, and further increases are likely to be necessary as resource constraints take hold*. In accordance with its mandate, the Bank will continue to "look through" high headline inflation caused by exceptional factors: consumption tax increases, the entry of industrial and energy sectors into the Emissions Trading Scheme (ETS), resurgent global commodity prices and items like insurance cost increases in the wake of the earthquakes. There are several potential sources of higher inflation pressures. Wage demands could respond to higher prices, especially if the labour market were to tighten unexpectedly. Estimates of potential output may be especially subject to uncertainty post-crisis. Indeed, with a recent history of relatively strong inflation, expectations have again been tending toward the upper range of the 1-3% official target band, even though underlying inflation remains subdued. *The Bank should remain vigilant to inflation risks and proactive in deterring them, as it clearly intends to be. It should also continue to explore the possibilities for countercyclical approaches to prudential regulation, consistent with Basel/G20 discussions, and consider applying maximum bank leverage ratios to mitigate financial-sector vulnerabilities*.

Macroeconomic imbalances reflect too little saving

The widening of the external deficit over the past decade reflects to a large extent the additional demand pressures associated with a boom in property and farmland markets. The boom, which was partly caused by strong inflows of migrants and rising commodity prices, was financed by accelerated private borrowing from abroad through the banking system. New Zealand's banks are well capitalised, but their continued, albeit somewhat reduced reliance on relatively short-term wholesale funding leaves them vulnerable to any

shift in investor sentiment – including those about the New Zealand banks themselves, or their Australian parent banks. Persistent saving-investment imbalances appear to reflect primarily national saving that has been well below OECD averages. At the same time New Zealand has long had to pay comparatively high real interest rates, which have driven up the cost of capital and deterred business investment. To the extent that such high interest rates reflect domestic demand pressures, rather than a risk premium, they may also contribute to a persistent overvaluation of the exchange rate, resulting in the decline in the share of domestic output for tradable goods and services experienced since the mid-2000s. Finally, high interest rates exacerbate negative dynamics on the external debt, with net investment income payments averaging some 6% of annual GDP. The persistence of low national saving also impedes the deepening of financial markets, which thereby limits the country's ability to mobilise and allocate capital efficiently and may perpetuate the lack of savings.

Sluggish productivity performance adds to vulnerabilities

New Zealand's living standards have for some time tracked persistently below the OECD average, as well as Australia's, despite robust terms-of-trade gains, mainly because of poor labour productivity performance. In part, this reflects a low rate of business investment and hence capital intensity per worker. Total factor productivity growth has also been low (and occasionally falling) as well. The country's small size and remoteness from key export markets may shield domestic firms from competitive pressures to innovate and seek efficiencies, while also reducing specialisation and integration into global production systems. Comparatively large state holdings of commercial enterprises and social housing may further dull competitive forces. With a lack of profitable opportunities domestically, a real exchange rate that has not fallen in response to widening income and productivity differentials between New Zealand and its main trading partners, relatively high (albeit now much reduced) corporate tax rates and an elevated cost of capital, businesses may have seen few rewards to reinvesting their earnings.

Fiscal consolidation is more urgent in view of external vulnerabilities

Prior to the recession, a main element of stability was a string of fiscal surpluses that helped to offset private-sector imbalances, at least in part. Even so, current spending grew relative to GDP by some five percentage points over a short period, as tax revenues surged in response to the decade-long period of growth. The fiscal position entering the crisis appeared strong, based on a low public debt-to-GDP ratio. Structural spending increases and tax cuts – decisions largely taken prior to the recession – provided a timely stimulus in 2009-10. However, this along with the automatic stabilisers, caused a shift to a substantial deficit of over 5% of GDP. Prior to the recent earthquake the government indicated it planned to return to surplus by fiscal year 2014/15, largely by means of spending restraint. This would have limited net public debt to less than 30% of GDP. The earthquakes will have a materially adverse short-term effect on the government's finances. Nonetheless, *returning to fiscal surplus as soon as possible should be a priority. To reduce the risk of pro-cyclical fiscal policy in the next upswing the government should consider whether further changes are needed*

to strengthen the existing fiscal framework. These might include adopting a more comprehensive public expenditure ceiling in a multi-year framework and an independent fiscal watchdog, as has been done in Sweden, for instance.

More worrying is a long history of high current account deficits and large net external indebtedness (most recently some 85% of GDP) – among the highest in the OECD and close to that now found in some European countries that have experienced recent problems. Once the recovery takes firmer hold and the private sector starts to spend again, the likelihood is that the current account deficit, which fell from around 9% of GDP in 2008 to about 3% of GDP (abstracting from insurance-related transfers associated with the earthquake) more recently, will widen again. With markets now focusing closely on sovereign and national indebtedness, such a scenario is riskier than it was. *These considerations suggest that it would be prudent for the government to aim for a larger medium-term surplus than the 2% of GDP in its December update*. Larger fiscal surpluses would directly raise national savings and thereby cut into the negative net international investment position. A more ambitious target would also do more to prefund liabilities associated with foreseeable population ageing. Faster budgetary consolidation would also allow monetary policy to stay easier for longer, which in turn would reduce interest-rate differentials and lower the exchange rate, thereby supporting external adjustment.

Tax and benefit policy reforms may contribute to rebalancing growth

Generous universal public pension and student-loan schemes may reduce the incentive for households to save, while non-neutralities in the taxation system bias investment decisions by distorting market signals. NZ Superannuation provides relatively high benefits compared to first-pillar pension systems in other OECD countries. While the fiscal cost of the scheme remains low, relative to the OECD average, it is projected to escalate as the population ages. *Improving the fiscal sustainability of NZ Superannuation through raising the retirement age, while slowing the pace of growth in benefit payments by, for example, a switch from full wage to partial price indexation could simultaneously provide large fiscal savings, increase potential output and boost household saving rates.* The expansion of tax-preferred investment vehicles such as KiwiSaver has the potential to raise the overall level of savings and deepen capital markets, but its success in achieving such objectives is currently limited by unfocused government subsidies. *A reform to KiwiSaver that would generate higher national savings by raising government saving is to remove subsidies, especially to high-income members who are most likely to have shifted their savings from other sources. Participation could be further expanded by broadening the automatic enrolment programme to all employees, rather than just new hires.* The 2010-11 budget introduced some reforms to address low saving and growth, but *further tax reforms – either by aligning top corporate, capital and labour income tax rates at lower levels or adopting a dual income tax approach – could further stimulate growth and saving.*

Housing market imbalances remain daunting

The boom in NZ housing markets that got underway in the early 2000s reflected two demand-side factors – easy credit financed from abroad and strong net migratory inflows – and was exacerbated by long-standing structural features of the economy. These include tight restrictions on new housing supply and regressive tax advantages to purchases of

rental properties. As a result, the increase in house prices was larger than in most other OECD countries. Although there has been some modest adjustment since mid-2007, prices remain historically very high relative to incomes and rents. Wealth gains have accrued primarily to property owners, whereas the proportion of households unable to afford to buy a home grew significantly. Aggregate household wealth appears to be more heavily concentrated in property and land assets than in most other advanced economies. Households seem to favour property in their portfolio allocation decisions in part because unrealistic capital gains expectations raise the perceived returns to real estate investment relative to alternative assets for long-term wealth creation. International experience has shown, however, that real estate returns are highly variable over time, and thus the long-term financial positions of NZ households are subject to substantial undiversified risk. An obstacle to expanding portfolio diversification is the lack of capital market depth, which limits the availability of alternative investments.

Tax incentives have distorted saving and portfolio allocation decisions in favour of housing

The exclusion of imputed rents and capital gains from the NZ tax base contributes to diverting household portfolios towards housing. Because nominal interest income and dividends are taxed, the absence of a capital gains tax raises the relative returns to assets with good prospects for price appreciation, which tends to favour property and farm investments, given their greater leverage possibilities and a thin domestic equity market. In addition, rental property investments benefited from generous tax provisions that led to increasing losses claimed by investors against their other income in order to reduce overall tax liabilities. The tax advantages helped to prolong the housing boom, further inflating property values. They are also regressive in that they benefit high-income investors more, at least to the extent that losses can be deducted at the marginal tax rate, and low earners are priced out of the market. The government addressed some of these distortions in the 2010-11 budget. *Introducing a comprehensive realisation-based tax on capital gains would further reduce the bias towards housing investment relative to other assets. Excluding primary residences from taxation would diminish the effectiveness of such a tax, but partial exemption or rollover relief could act as a "second best" solution so as to facilitate public acceptance.* The government has so far refrained from introducing a capital gains tax. In such circumstances, it should consider other alternatives including *reducing the taxation of alternative savings to level the investment playing field and further limiting the extent to which property investment losses can be deducted for tax purposes. Such measures should be accompanied by higher property or land taxes that could be designed to achieve the same objectives as a tax on imputed rent.*

The recession has increased pressures on social housing

Inflexibility in the supply of social housing has resulted in lengthening high-priority waiting lists in certain regions, in contrast with an oversupply of social housing in others with low demand. A tradition of providing long-term tenancies with no re-assessment has also constrained the ability to match household needs with the available public housing supply, leading to a significant share of Housing New Zealand Corporation (HNZC, the public provider of social housing) dwelling units that are either underutilised or

overcrowded. The government's plans to introduce reviewable tenancies for all new tenants and expand the participation of third-party suppliers should improve supply flexibility and efficiency, increasing the provision of state housing to those most in need, in line with HNZC's mandate. *Extending regular needs reassessments to all existing tenants could further enhance the capacity for social housing to match household requirements. This should be accompanied by greater efforts to actively assist occupants to transition towards self-sufficiency. Finally, HNZC's financial viability could be improved by terminating water-rate subsidies to tenants able to afford market rents and by divesting non-core activities.*

Easing supply constraints will require more efficient planning policies

Supply constraints have also contributed to the sustained increase in house prices. They arise in part from increasingly restrictive land-use regulations, which have driven up land values in several regions and largely reflect local government attempts to devise growth strategies that incorporate wider environmental objectives. These strategies have commonly taken the form of designating boundaries to promote high-density urban development within confined areas, thereby protecting the surrounding environment. There are indications that these restrictions have contributed to inflated land prices within such containment areas, without any clear net environmental benefit. Furthermore, residential densification has been stymied in certain areas by inconsistent district zoning plans and a lack of coordinated infrastructure provision, which raise uncertainties and risks for developers and discourage housing construction. This has added to upward pressures on property prices.

The government plays an important role in urban planning, given the environmental and societal externalities generated by land development. *Efficient planning policies should aim to capture such externalities through pricing mechanisms that assign socially optimal values to land, based on cost-benefit analyses of alternative land uses considering the location of housing, job opportunities and public transit.* This could be implemented through more systematic use of "financial contributions" (currently levied on developers to capture the environmental cost of land release), which would influence the location of development more efficiently than imposing urban growth boundaries. *These policies should also include consistent pricing signals for urban road use, congestion and parking, combined with better mass transit service to reduce carbon emissions and other pollutants from automobile exhaust more efficiently. Efforts should proceed to develop spatial planning systems that align land-use policies with infrastructure investment decisions, while improving co-operative engagement among various levels of government, private developers and infrastructure providers.* The current design of "development contributions" (charged to developers to fund the cost of additional infrastructure) may increase the price of new housing construction disproportionately, while subsidising existing residents. *The funding of infrastructure development could be more evenly distributed by charging higher user fees to all residents expected to benefit from the services provided.* Where it is impractical for pricing mechanisms to fully capture social and environmental costs, zoning may still be required.

Regulatory quality has lost ground and regulatory governance should be further fortified

Wide-ranging reforms in the 1990s liberalised the economy and significantly reduced competitive restrictions, putting New Zealand at the forefront in terms of regulatory practice. Since then, however, the reform momentum has waned, and policy has even occasionally moved in the direction of discouraging competition. At the same time, other countries have been making progress, and, as a result, regulatory quality now appears average relative to other OECD countries. It needs to move again to the forefront to promote sustained growth. Regulatory uncertainty resulting from sudden policy changes arising from too much ministerial discretion, along with inconsistency in the extent to which policies are designed to support competition may be suppressing entrepreneurship and investment. This underlines the *need for further embedding, and more disciplined use, of the system of regulatory governance, along with more rigorous use of quantified regulatory impact analysis to justify policy changes*. The establishment of a Regulatory Quality Team within the Treasury to assess regulatory proposals, co-ordinate and recommend improvements to the regulatory management system and help the government set a prioritised regulatory review programme is a welcome step. But more work and political will is required to instil a culture of continuous improvement within the public bureaucracy, supported by evidence-based decision-making. *Productivity could be fostered by requiring clear net public benefits to justify regulatory restrictions on competition and establishing transparent quality benchmarks by passing a suitably refined Regulatory Responsibility Bill.*

In the network sectors, the government's increasing interventions have reduced market transparency and stability, distorting competition and increasing risks to investors. Examples include the Ultra Fast Broadband Initiative, which was never subjected to a full cost/benefit analysis, and the government's "Kiwi share" in Telecom, which may constrain competition and *should be eliminated. While regulators should be accorded more autonomy, they should also be subject to strengthened accountability mechanisms through periodic independent assessments of their decisions.*

Competition policy should continue to move toward global best practice

Because of its size and remoteness, regulation of competition in New Zealand is perhaps more complex since in certain cases achieving scale economies is more difficult than in larger countries but may generate efficiency gains that justify restricting competition. As a result, enforcement of competition law has become a subjective process, creating lengthy delays in the finalisation of decisions. While recent restructuring efforts should expedite matters, *allowing a wider range of interventions could engender further efficiency gains, and regular* ex post *evaluations of mergers and acquisitions could act as an audit on Commerce Commission decisions. Anti-monopoly law could be made more effective through amendments to allow greater flexibility, in line with Australian legislation or OECD best practice.*

State ownership has increased, and barriers to FDI have tightened

While the government has commendably sought to reap the benefits of greater openness to foreign trade by seeking out and signing new free trade agreements, public ownership of commercial enterprises has increased over the past decade, which has likely restrained aggregate productivity by reducing competitive pressures and risk-taking, while discouraging FDI. Compared internationally, New Zealand's SOEs seem to perform better than many others, but there is room for improvement. These asset holdings are substantial, and moving towards public listing of state-controlled commercial assets and full or even partial privatisation would strengthen market discipline and transparency through securities listing requirements and legislation protecting minority shareholders. If the government proceeds with partial privatisation of state-owned electricity generators, then entrepreneurship, corporate governance and market transparency would be enhanced, but continued progress towards full privatisation will be needed to reap the full productivity benefits. The screening regime for FDI has become less transparent with regard to investments in sensitive land. Greater clarity needs to be provided, notably by removing ministerial veto powers, to avoid discouraging foreign investment that could enhance overall productivity. Meanwhile, continued integration, where appropriate, through policy harmonisation, mutual recognition of standards or, at least, co-operation with Australian and other counterparts would mitigate the relatively high cost of regulatory governance and competition-law enforcement, yielding important business-sector efficiencies.

Green growth would be a key advantage

The NZ government has long promoted the principles of sustainable development. For example, the 1991 Resource Management Act (RMA) synthesised all previous environmental legislation into one law that attempted to integrate environmental costs and objectives into private resource-use decisions. The 2009 Emissions Trading Scheme (ETS) for greenhouse gases (GHGs) was one of the OECD's first such measures. The nation's tangible wealth and human skills to a large extent derive from its abundant natural capital, implying strong interdependencies between the economy and the environment. New Zealand is the world's premier dairy exporter, demonstrating the efficiency of its agricultural sector under a complete absence of agricultural subsidies. Tourism, which is primarily nature-based, has been growing rapidly and now surpasses dairy as the nation's highest export earner. As a small and remote, resource-based economy, New Zealand has to overcome high hurdles to both sustain its "clean and green" image and raise its productivity by exporting more. Markets today are attuned to environmental values and economic efficiency alike. Policies to pursue inclusive economic growth with sound environmental effects are essential to secure New Zealand's natural advantages in international competition.

More efficient water and land management should be a priority

As in the majority of OECD countries, environmental policy has tended to be carried out by regulation rather than by market-based instruments (MBIs). *Greater recourse to environmental*

taxation should be seriously considered for both its efficiency- and revenue-raising benefits. The implementation of the RMA, which was devolved to the regions, involves high costs. Regional resource "consents" (official approvals) required for urban and rural investment projects have tended to be lengthy and costly in terms of both administration and litigation. Water shortages have occurred in drought-prone areas where dairy farms have sprouted in response to price incentives, as legal restrictions discourage explicit markets for irrigated water, with also adverse consequences for water quality. Progress is being made, however. The RMA has been twice reformed to more clearly allow the use of MBIs and to make the consenting process more efficient. The government has created a Land and Water Forum to allow stakeholders to collaboratively identify options for reform of New Zealand's fresh water management, and has established an independent Environmental Protection Authority (EPA) to oversee policy implementation in areas of clear national interest. Some regions, faced with more severe resource constraints, have begun to experiment with trading in water irrigation and pollution rights. As intended by the RMA, *national environmental standards and policy statements should be established to better guide local decisions to make users of the environment more accountable, and regions should carry out cost-benefit analyses of proposed regulations in view of these guidelines. The new EPA should be assured of its independence and given broad leeway to pursue its objectives in the most economically efficient manner. Markets for water allocation and pollution rights, either formal or informal, should be encouraged by removing regional legal restrictions to trading. New dams to store water for irrigation could also help to make allocation more efficient and to increase absorptive capacity, but environmental side-effects (such as increased GHG emissions due to more dairying made possible by water storage) should be taken into account.*

The emissions trading scheme is a major development

The 2009 ETS for GHGs was path-breaking in two main ways: it embodied New Zealand's faithfulness to turning Kyoto promises into policy actions, even after the global crisis had intervened and uncertainties were high, and even as other countries balked; and it incorporated all gases and sectors, including agriculture, as no other scheme (actual or planned) has done. New Zealand's Kyoto obligation is to bring GHG emissions back to 1990 levels by 2012. This will be challenging in several respects. As a commodity producer, it is the OECD's second highest GHG emitter in terms of production intensity, with roughly half coming from agriculture for which no known technology for significant mitigation of GHG emissions exists. A large proportion of electricity generation is already hydro-based, foreclosing that opportunity to reduce energy-sector emissions. Since 1990, gross emissions have grown by 23%, with the highest growth in the energy (transport) sector, reflecting a high rate of car ownership and an old car fleet.

The ETS holds the promise of assuring least-cost mitigation, although New Zealand, as a high-marginal-cost abater, may have to purchase emissions permits abroad. The ETS is subject to a review this year, with the future of the international climate change framework being a key consideration. A number of transition measures have been introduced to moderate its initial impacts and enhance its political acceptability. These measures include uncapped, intensity-based free permit allocations to energy-intensive, trade-exposed industries based on current (rather than baseline year) production, standardised on sector-average intensity. There is thus no firm cap on allocations, while

the price is fixed until the end of 2012. Foresters receive credits for plantings, and this will be a main way of meeting obligations under the first commitment period (2008-12), though corresponding liabilities will arise when many of these forests are felled starting around 2020. *Conditioning the extent to which the carbon price signal should be strengthened on progress towards a comprehensive international agreement on emissions reduction is an appropriate approach for the required 2011 review of the ETS.*

If progress is sufficient, ways of strengthening the price signal should include a binding cap on the allocation of permits that reflects New Zealand's international commitment. Auctioning permits would generate useful public revenues that could be used to support fiscal consolidation or to offset other distorting taxes. If free allocations are maintained, they should be distributed on a basis other than current intensity-based output, such as tax credits for emissions-reducing investment or input costs. New entrants into exposed industries, especially in heavily polluting sectors, should not receive free allocations. If, however, major trading partners were to fail to make progress commensurate with New Zealand's own carbon pricing policy for industry, free permit allocations should remain uncapped but their distribution should be better targeted as described above. In any case, the long-run fiscal costs, distributional impacts and risks of the ETS should be fully assessed and its risk management strengthened. Finally, New Zealand has led global efforts to measure and model agricultural emissions. Publicly funded research efforts to find innovative technological solutions to agricultural methane and nitrogen emissions should press forward. Agriculture should enter the ETS as planned, but in the absence of its inclusion in other countries' schemes, the price signal should remain muted.

Chapter 1

Adjusting towards a sustainable growth path

The 2008-09 recession was moderated by unprecedented policy stimulus and by relatively strong growth in Australia and Asia, New Zealand's largest trading partners, which also boosted the terms of trade. The subsequent recovery has been unexpectedly weak and patchy, however. A large debt overhang and increased risk aversion following the global crisis have led to a wish to deleverage by households, firms, banks and (soon) by government. This seems a necessary and desirable part of adjusting toward more sustainable long-run growth. The debt-fuelled property boom of the past decade drove down already structurally low household saving rates. Expansionary fiscal measures implemented prior to the recession, together with cyclical revenue shortfalls and major one-off earthquake costs, have now reduced government saving rates as well. With most of the growth in household, business and now government debt funded from abroad, for the private sector mainly through the banking system, net foreign liabilities have accumulated to levels that make the economy particularly vulnerable to sharp changes in investor sentiment. Persistently higher interest rates relative to other countries are symptomatic of low levels of national saving and have attracted significant capital inflows, placing upward pressure on the exchange rate and thereby shrinking the trade-exposed sector. Relatively high interest rates have also driven up the cost of capital, restraining domestic investment and hence longer-term growth prospects. The official objective of closing the productivity gap with Australia will require a re-balancing of the economy away from consumption towards more productive sources of growth. Fiscal consolidation, in particular through paring back public spending, will play an important role in reducing pressure on the exchange rate and improving the external position. This would allow price stability to be maintained at lower real and nominal interest rates. Public transfer cuts and capital divestments could, in a context of broader regulatory reforms to reduce policy distortions, serve to improve private incentives to work, save and invest, boosting potential growth.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

The economy is being supported by strong terms of trade and the easy stance of monetary and (until now) fiscal policies. At the same time, it is being restrained by belt tightening underway in the private sector, depressing growth in domestic demand. A high NZ dollar is also holding back the tradable sector from taking advantage of relatively buoyant growth in some key trading partners. Bank balance sheets remain healthy, but the economy is exposed to a potential correction in still lofty property prices and to sudden changes in global financial market conditions and investor sentiment. While these vulnerabilities are mitigated to some extent by strong institutions, a flexible exchange rate and relatively low public debt, they do heighten the urgency to reduce the large budget deficit. At present policy settings, the current account deficit is likely to widen anew as the economy recovers, inviting the risk of a more severe future adjustment.

Macroeconomic developments

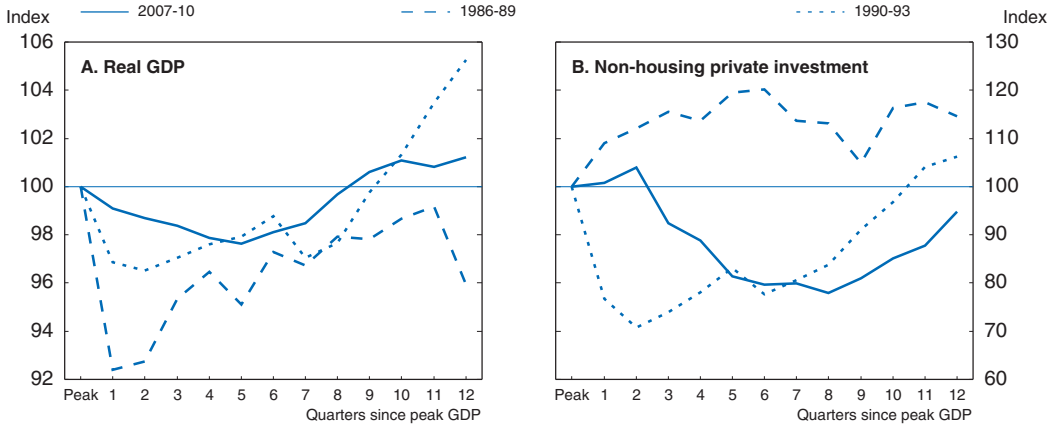
Desired deleveraging in the wake of recession

Compared with many other OECD countries, the recession of 2008-09 was not especially severe (although the contraction in GDP per capita matched that in the United States). This reflected highly supportive monetary and fiscal policies (the latter primarily reflecting decisions taken prior to the global downturn), both of which had comparatively ample prior scope for easing. Apart from liquidity problems, the banking system was relatively sheltered from the upheavals abroad thanks to healthier balance sheets largely unencumbered by "toxic assets". Also, the structural reorientation of NZ exports toward high growth markets in East Asia (and indirectly so via Australia) provided an early burst of renewed demand, with China having displaced Japan as New Zealand's second largest trading partner, following Australia. A further buttressing factor very early in the downturn was the strength of New Zealand's export prices, notably for dairy products, and resulting terms-of-trade gains, though higher commodity prices partly reflected a debilitating drought that depressed NZ farm export volumes and started the recession just prior to its international financial outbreak.

However, the recent episode featured a prolonged decline in non-residential private capital investment (Figure 1.1). This was despite New Zealand itself not experiencing a banking crisis. In the global financial crisis of 2007-09, the cost of capital surged globally in tandem with risk aversion, causing financial conditions to deteriorate even as interest rates across the credit spectrum fell. For New Zealand, as a capital-importing country with heavy reliance on bank foreign wholesale borrowing, the potential consequences for banks and their borrowers were far more severe than under the more typical domestic monetary policy-induced or export-led recessions, given high uncertainty about the continued availability of funding. The consequent slowing in housing and farmland markets aggravated the downturn, as they dampened consumption and reduced expected gross investment returns, while exposing bank loan portfolios to collateral risk. Global commodity prices, the exchange rate and the terms of trade plunged with the onset of the global crisis,

Figure 1.1. **Recession and recovery compared with previous cycles**

2007q4/1986q3/1990q4 = 100, chained volume indices



StatLink http://dx.doi.org/10.1787/888932399335

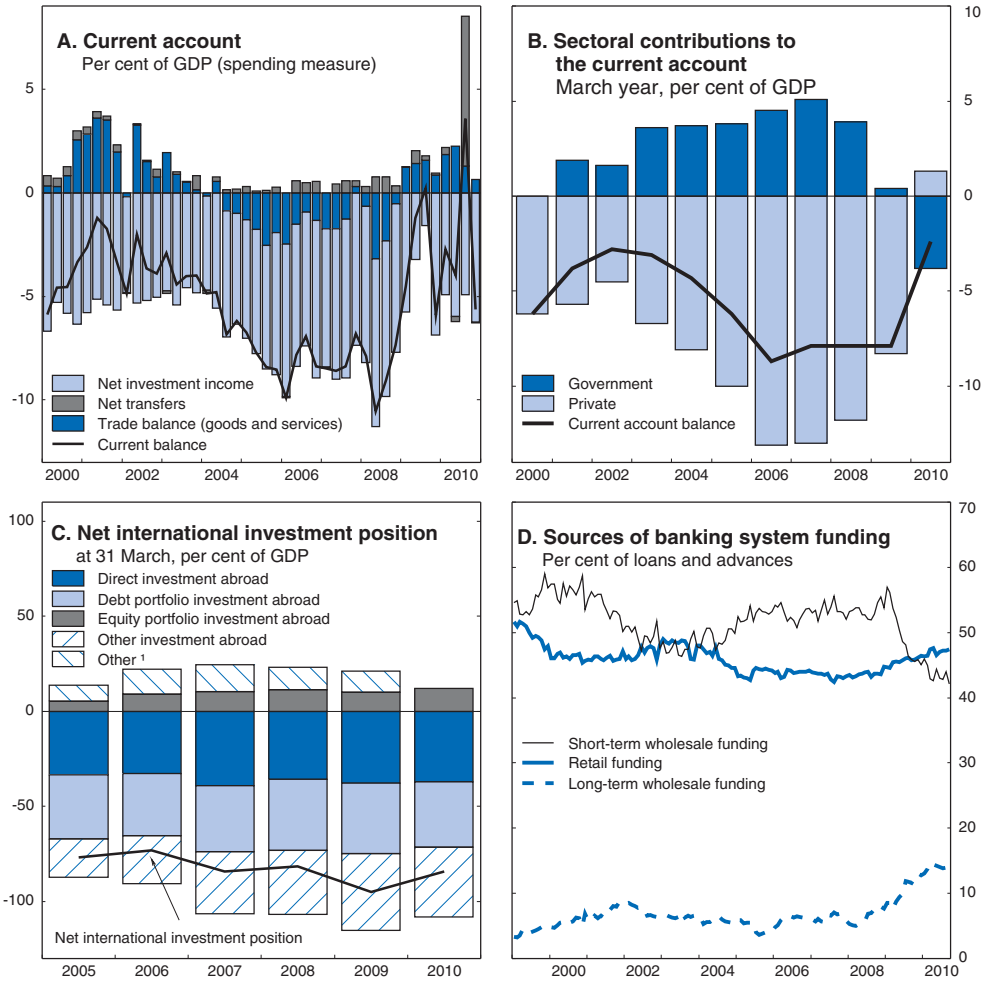
but since mid-2009 they have recovered towards their previous early 2008 peaks, whereas domestic house and farm prices have continued to edge down (see below).

The exchange rate, which is of critical importance given the openness of the economy, has been trending upward in response to commodity price movements, contributing to the steady crowding out of manufacturing and other non-resource tradeables. Its shorter-term fluctuations have been dominated, however, by international interest-rate differentials and global market attitudes towards risk. In 2008, as domestic monetary policy eased sharply and the global financial situation deteriorated, with commodity prices also declining, the currency fell by some 30%. This provided some early support to net exports in the recession. However, over the course of 2009-10 the exchange rate again appreciated, recouping most of its earlier decline, mainly in response to the recovery in risk appetite following massive liquidity injections (including quantitative easing) by the major OECD countries, leading to a renewed search for yield in countries like New Zealand.

New Zealand's current account deficit narrowed sharply with the onset of the global financial crisis and recession, reaching close to zero towards the end of 2010 from a peak of over 10% of GDP in mid-2008 (Figure 1.2, Panel A). This improvement reflects a number of cyclical and one-off factors and may therefore be largely temporary.[1] Private saving rates have risen, while terms-of-trade gains and weak domestic demand have combined to return the trade balance to surplus since early 2009. Nonetheless, longstanding current account deficits have historically primarily reflected net investment income outflows associated with its substantial net foreign liabilities. At over 85% of GDP, New Zealand's negative net international investment position (NIIP) stands uneasily close to levels in European countries that have recently experienced significant economic and financial stress (Figure 1.3). But there are differences as well. New Zealand's NIIP has been at or above current levels for over two decades now, and has lately fallen slightly, whereas the others' increases are more recent. Against this, shorter-term portfolio instruments, more prone to capital flight, still dominate New Zealand's indebtedness profile (Figure 1.2, Panel C).

The surge in gross external debt to over 130% of GDP reflects twin asset-price booms in housing and rural land markets. Propelled by net migration inflows and easy credit conditions in the early 2000s (Figure 1.4, Panels A and B), house prices rose more than in most other

Figure 1.2. **External vulnerability**



1. Other is reserve assets and financial derivatives.

Source: Reserve Bank of New Zealand (2010), *Financial Stability Report*, November; International Monetary Fund; and Statistics New Zealand.

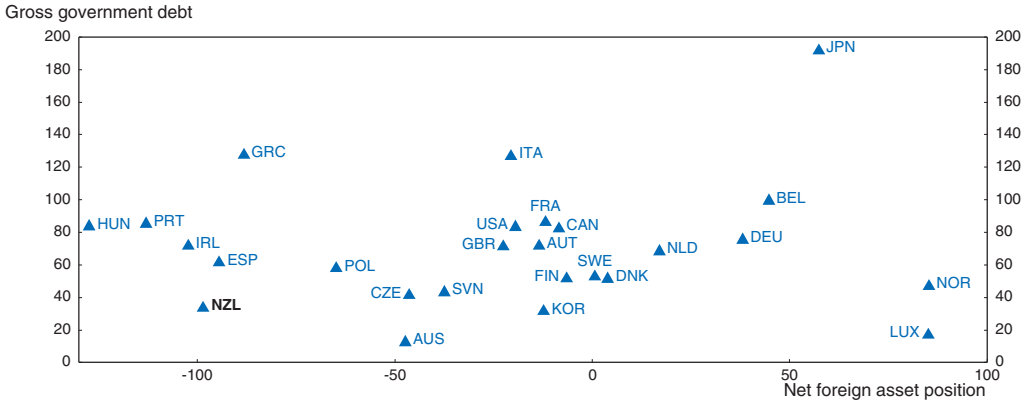
StatLink http://dx.doi.org/10.1787/888932399354

OECD countries, financed by rising household debt (Chapter 2). Additionally, the hike in dairy prices in 2007-08 bolstered demand for farmland for conversion to dairy production, roughly doubling farm prices after they had already risen significantly in the previous five years. Bank credit to the agriculture sector grew significantly to fund investments of new entrants and expansion or conversion of existing farms. The stock of agricultural debt has swelled by over 50% since early 2007 to reach NZD 48 billion (or 25% of GDP), of which dairy farming represents about 65%. In both the housing and farmland markets, expectations of capital gains and the ability to use property as collateral probably propagated further debt accumulation and wealth effects, further lowering the household saving rate.

Whereas house prices have remained relatively high throughout the economic downturn, in part because household wages held up despite rising unemployment, farmland prices fell more sharply in line with dairy prices during 2009 and have failed to follow them up again in the 2010-11 commodities bounce-back (Figure 1.4, Panel D). The drop in farm incomes strained the ability to service debt in the agriculture sector, although

Figure 1.3. **Government debt and net foreign asset position**

Percentage of GDP, 2009[1]



1. 2008 for Australia; the 2009 gross debt data for Japan and Luxembourg are the OECD EO88 projections.

Source: IMF, *International Financial Statistics Database*.

StatLink http://dx.doi.org/10.1787/888932399373

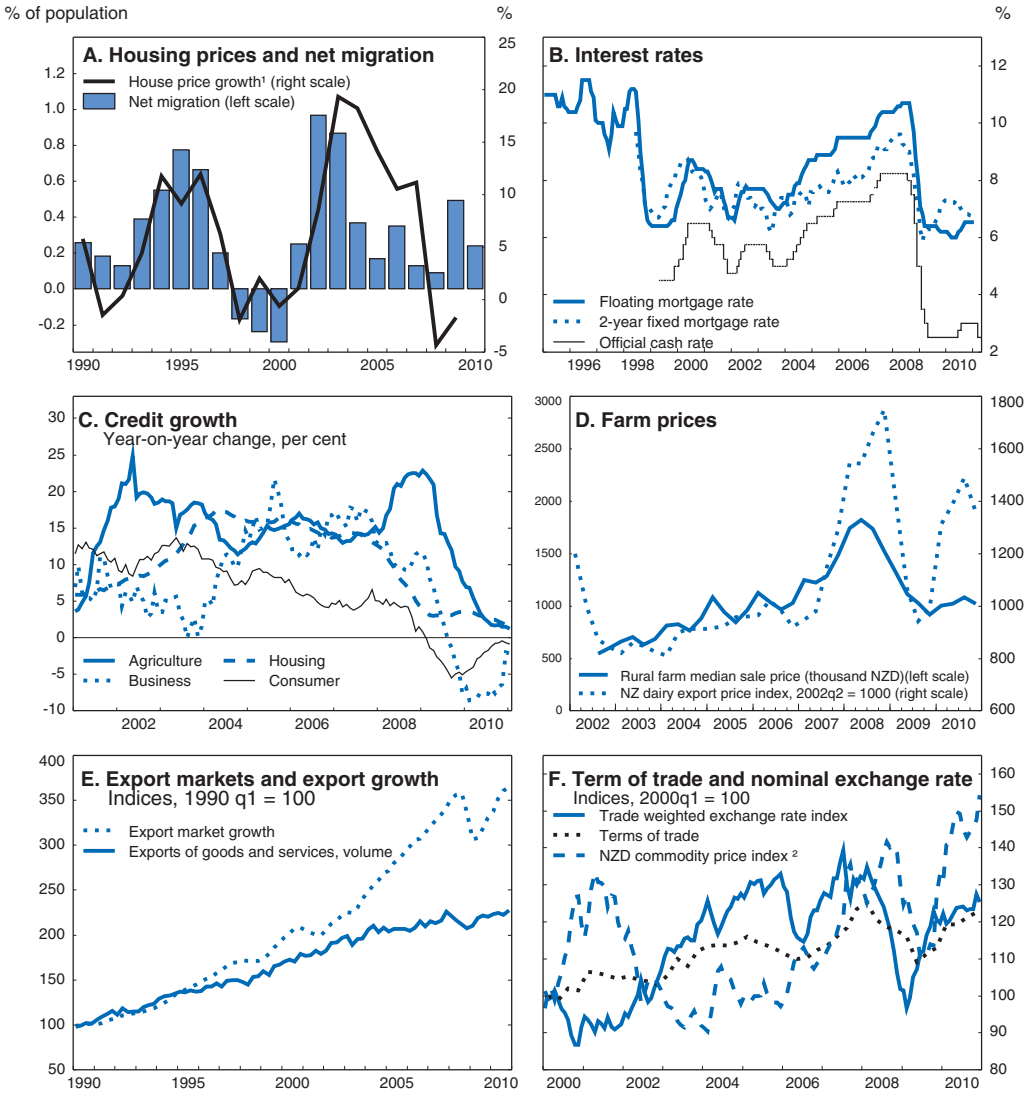
financial stress is concentrated in new, highly leveraged farms, which constitute a small proportion of the sector. Farmers have been struggling with alternating wet and dry weather, which greatly reduces their productivity,[2] while trying to reduce debt burdens. The recovery in dairy prices since late 2009 is improving the profitability of the farm sector and facilitating balance-sheet repair. Furthermore, the launch of dairy futures contracts on the New Zealand stock exchange (NZX) in October 2010 has enhanced farmers' ability to hedge against commodity price fluctuations.

Heightened economic uncertainty has reduced demand for credit as business, household and farm sectors have all focused on deleveraging, despite markedly lower bank lending rates (Figure 1.4, Panels B and C). Slower credit growth since early 2009 may also reflect tightened lending standards due to higher bank borrowing costs, evident risks to the value of collateral and the collapse of several non-bank finance companies. Banks are probably maintaining a cautious stance, given the increase in non-performing loans from 0.5% in mid-2008 to 2.0% in mid-2010, particularly in the commercial property and agriculture sectors, although impaired loans remain low by international comparison. Nevertheless, the main restraining factor likely lies on the side of the demand for credit. Despite much reduced credit growth, households have not yet succeeded in significantly reducing the ratio of their indebtedness to disposable income (see Chapter 2, Figure 2.4).

Interrupted recovery and uncertain outlook

The above noted exchange-rate appreciation coincided with factors that led to very poor GDP growth through much of 2010: recurring global uncertainties, such as those stemming from the European sovereign debt crisis; a considerable slowing in the housing market following a 0.5 percentage point increase in floating mortgage interest rates and changes to the taxation of property investment; ongoing efforts by households to reduce debt and persisting business uncertainty, jointly implying only modest increases in retail spending, employment and investment; and an early summer drought causing agricultural production to slow sharply towards end year (RBNZ, 2011). A severe earthquake that struck the Canterbury region in September further encumbered the already fragile recovery,

Figure 1.4. **Macroeconomic indicators**



1. House price is the Quotable Value Ltd. house price index, house only; percentage change from previous year.
2. This NZD price index, published by ANZ, summarises the price trends for New Zealand's 17 main commodity exports.

Source: ANZ; Reserve Bank of New Zealand; Statistics New Zealand; The Treasury (2010), *Saving in New Zealand – Issues and Options*, September.

StatLink http://dx.doi.org/10.1787/888932399392

which essentially stalled in the second half of 2010. At the same time, the recovery of dairy prices and associated terms-of-trade gains have assisted the deleveraging process in the farm sector, in particular by providing some renewed support to real domestic incomes. In early 2011, just as some hopeful signs were emerging – improved climactic conditions, recovering business sentiment, increasing imports of capital equipment, stated intentions to start hiring and the anticipated reconstruction – a second and far more destructive earthquake struck Christchurch, greatly compounding the uncertainties and delaying recovery once again (Box 1.1).

Box 1.1. **The Christchurch earthquakes**

The devastating earthquake that struck Christchurch on 22 February 2011, the second to the Canterbury region in little more than five months, is expected to exact an important toll on the economy, in addition to the losses in human life, with many serious injuries and people facing permanent disabilities. The second largest city in New Zealand, Christchurch accounts for 12% of total economic output (the broader Canterbury region accounts for 15%). It is considered the gateway to the South Island, as many tourists arrive at Christchurch international airport. Early unofficial reports suggest that up to one-third of buildings in the central business district (CBD) will have to be written off, with major damage to infrastructure and housing in the surrounding region, albeit little harm to the rural areas which had suffered more in the first quake. Based on initial information, the expected economic impacts are as follows.

Financial costs

Preliminary estimates by the NZ Treasury and the Reserve Bank suggest that the financial cost of the damage from the February earthquake will be 2-3 times that of the September quake. The estimated cost of the two earthquakes combined is approximately NZD 15 billion (Table 1.1). This is equivalent to around 2.5% of the replacement value of the national capital stock (excluding land) as of 31 March 2010. As the estimated cost of rebuilding is highly uncertain, these figures should be regarded as only indicative. Some structures may never be replaced. Liquefaction of the soil in significant areas, particularly in the eastern suburbs, may preclude rebuilding or require costly land remediation. Permanent outmigration and business closures due to the immense disruption in activity or to a fear of future tremors could reduce the extent of rebuilding. Conversely, wholly new business activities could emerge as the city uses the opportunity to "reinvent" itself.

Table 1.1. **Estimate of financial cost of the earthquakes**

NZD billion	Residential	Commercial	Infrastructure	Total
4 September	3.25	0.75	1.0	5.0
22 February	6.0	3.0	3.0	12.0
Total[1]	**9.0**	**3.0**	**3.0**	**15.0**

1. Totals do not sum to avoid double counting of damage.
Source: NZ Treasury.

Fiscal costs

The Earthquake Commission (EQC) provides cover for residential buildings and their contents, both being subject to reimbursement ceilings (NZD 100 000 + GST per house and 20 000 + GST for its contents). The EQC is liable for the first NZD 1.5 billion from any one event (including aftershocks), after which the EQC relies on reinsurance up to NZD 4 billion. Its liability for the two earthquakes is estimated at NZD 3.05 billion so far. The rest of the residential damage and all of that to commercial property is borne by private insurers, reinsurers and owners.

Most of the cost of the infrastructure damage (NZD 3 billion) will be funded by the government (central and local, with central government paying 60%, and possibly more, of the damage to local government infrastructure). The government will incur additional direct costs of a social welfare nature. An NZD 120 million emergency assistance programme was put in place, providing financial support for six weeks to small businesses and workers whose jobs have disappeared, followed by a modified assistance programme.

Box 1.1. **The Christchurch earthquakes** *(cont.)*

Additional fiscal costs are expected to cover extra health care services, disability claims and accommodation benefits. Land remediation will also be required. Including all such current and capital costs, the total cost to the central government ("Core Crown") from the two earthquakes is currently estimated at NZD 4.5 billion (2¼ per cent of GDP). Including Crown Entities (notably the EQC) and SOEs (which are not part of Core Crown) Treasury's total public-sector cost estimate comes to around NZD 7.75 billion.

Weaker economic activity is also expected to depress tax revenues considerably. According to Treasury estimates, the resulting shortfall in tax revenue is likely to be in the range of NZD 3-5 billion over a five year period, some 1-1.5% of the total revenue base forecast in the December 2010 half-year economic and fiscal update (HYEFU). The OECD's preliminary updated projection of the total fiscal cost to the government comes to nearly NZD 9 billion over the five years of the budget horizon, being heavily front-loaded into 2011 and 2012. This has been incorporated in the revised projections (Table 1.2). Over time, roughly half of the cost is assumed to be the result of higher spending and half due to lower revenues. The government aims to find budget savings elsewhere so as to reduce this estimate. The prime minister, for example, has floated the idea of capping Working for Families to higher income individuals as a way of partially paying for earthquake costs, and the finance minister has said that interest-free student loans are "back on the table" for scrutiny as a possible source of savings.

The assets of the EQC will eventually need to be rebuilt by means of a higher earthquake levy on households. Also, insurance and reinsurance premia will most likely rise, perhaps significantly given the large present costs, putting a new financial burden on government as well as homeowners and businesses.

Economic impacts

The economic recovery that was expected to accompany rebuilding from the September earthquake is likely to be delayed by several quarters, especially as the most recent quake came on top of an unexpectedly weak economy in the second half of 2010. These economic impacts are highly uncertain and should be distinguished as follows:

- In Christchurch, the earthquake has caused considerable short-term disruption to production, especially in the March quarter during much of which the CBD was closed off. Lower business and consumer confidence is likely to persist for some time, possibly until the rebuilding phase gets well underway in 2012. Negative short-term demand effects, including the loss of export services from tourism and delays to rebuilding following the previous quake, will be significant. The Treasury estimates a negative impact on GDP of 1.5% in 2011, with much of that occurring in the March quarter and the effect tailing off over the rest of the year. The OECD tentatively projects a similar order of magnitude impact.
- The previously expected rebuilding from the September earthquake has been significantly delayed. This was already proceeding more slowly than expected as a result of the ongoing aftershocks, the extent of the damage and the complexity of the repairs and rebuilding. There will now be a further delay, as the complexity of the task has increased with a need for large-scale planning and coordination. This involves removing the positive impact of the September earthquake rebuild from the previous forecasts, though there will be some demolition work initially and repair of essential infrastructure and housing and land remediation.

Box 1.1. **The Christchurch earthquakes** *(cont.)*

- The positive economic impact from the rebuilding of Christchurch and surrounding areas is unlikely to get well underway until early 2012, given continuing aftershocks and the need for insurance assessments, consents and plans (though valuable experience gained after the first earthquake should help to avoid mistakes as well). Significant infrastructure rebuilding and construction of temporary accommodation is likely to occur in 2011, nevertheless. The pace of the reconstruction is a crucial consideration; although there is currently spare capacity in the economy, the resources available for additional residential and commercial construction may be limited, potentially causing shortages to appear elsewhere in the country as local wage and price pressures attract these limited resources. The rebuilding phase is expected to take 5-10 years.
- Potential output will fall as a result of the loss of productive capacity in the Canterbury region until rebuilding is complete. Inflation is expected to be higher than otherwise, particularly in 2012 due to strong initial pressure on construction wages and prices, as well as rents. Unemployment will be higher in 2011 though starting to decline rapidly in 2012. The external balance will benefit from one-off reinsurance receipts (a current transfer), estimated by the Reserve Bank at NZD 6 billion in Q1 2011 following NZD 3.6 billion in Q3 2010, though the current account deficit may rise to over 6% of GDP as rebuilding takes off in 2012.

Given continuing efforts at private-sector deleveraging, the added blow to activity and confidence from the earthquakes and persisting risks to the world economy, the outlook for the next two years is marked by unusually high uncertainty. In 2011, the mainstay of growth will be strong Asian demand for food and resources, the waning impact of the exchange-rate appreciation, as well as some favourable one-offs, namely incipient reconstruction from the two earthquakes and the September/October 2011 Rugby World Cup (the latter providing an expected GDP boost of ¼ to ½ per cent). Against this, the Christchurch earthquake will entail a sharp but temporary slump at the beginning of the year, followed by a gradual resumption of activity and start of rebuilding as the year progresses (Box 1.1). The recent natural disaster in Japan may also temporarily weaken external demand, though it will eventually increase demand for NZ timber when domestic sales of building materials will likewise be very strong. Steady falls in unemployment, once they come, could dissipate uncertainty and lift consumer spirits and thus private consumption, but the underlying theme of deleveraging may persist for a while, especially as wage growth will be constrained by labour-market slack and house prices will probably at best be stagnant. In 2012, reconstruction should be underway much more solidly, greatly boosting construction investment rates and hastening the decline in unemployment and recovery of private consumption and GDP. At the same time, the monetary authorities will no doubt withdraw some stimulus since the policy rate is expected to be still well below the estimated natural rate and the output gap will be narrowing faster, while fiscal policy turns restrictive. Endogenous factors, notably a long delayed fixed investment recovery as labour-market slack disappears, should gradually take over as the mainstays of growth (Table 1.2).

The still weak recovery in 2011 implies that the negative output gap will widen anew, though there should be little downward pressure on inflation. Underlying inflation should remain around the 2% mid-point of the Reserve Bank's inflation target range. Headline

Table 1.2. **Short-term economic outlook**

Annual percentage change, volume (chained 1995/96, NZD)

	2007	2008	2009	2010	2011	2012
GDP	**3.4**	**–0.7**	**0.0**	**2.5**	**0.8**	**4.5**
Private consumption	4.1	–0.3	–0.7	2.0	0.4	2.3
Government consumption	4.4	5.0	0.6	2.3	1.7	1.1
Gross fixed capital formation	6.0	–4.4	–10.6	2.4	6.3	18.7
Final domestic demand	4.6	–0.3	–2.6	2.1	1.9	5.5
Stockbuilding[1]	0.0	0.4	–1.9	1.4	1.0	–0.1
Total domestic demand	**4.8**	**0.4**	**–5.0**	**4.2**	**2.4**	**5.4**
Export of goods and services	3.9	–1.7	1.7	3.0	5.7	7.1
Imports of goods and services	8.9	2.1	–14.6	10.2	10.5	9.9
Net exports[1]	–1.6	–1.1	5.3	–1.9	–1.2	–0.8
GDP deflator	**4.0**	**4.0**	**0.7**	**2.2**	**4.6**	**3.0**
Memorandum items:						
GDP (production)	2.9	–0.2	–2.1	1.5	0.6	4.5
Consumer price index	2.4	4.0	2.1	2.3	4.6	2.7
Employment	1.9	0.6	–1.1	0.7	0.1	2.6
Unemployment rate	3.7	4.2	6.2	6.5	7.0	6.3
General government financial balance[2]	4.5	0.4	–2.6	–4.9	–8.6	–6.2
Cyclically adjusted government primary balance[2]	4.1	0.9	–0.4	–2.2	–5.4	–3.6
General government gross debt[2]	25.7	28.9	34.5	39.0	46.1	52.4
Current account balance[2]	–8.0	–8.7	–2.9	–2.2	–1.6	–6.4

Note: The figures for 2007-10 represent the latest historical data whereas those for 2011-12 are the OECD's latest internal projections.

1. Contributions to changes in real GDP (percentage of real GDP in previous year).
2. As a percentage of GDP.

Source: Statistics New Zealand and OECD calculations.

inflation, on the other hand, will rise to over 5% in early 2011, reflecting the pass-through of recent policy measures (GST and tobacco excise tax increases and entry of energy and industrial fuels into the emissions trading system (ETS); see Figure 1.6). Moreover, international food and energy prices have been rising , reflecting global recovery and poor growing conditions in food-producing countries (including New Zealand), and more recently political tensions and internal conflict in oil-producing countries, although continuing massive global liquidity could also be playing a role. Greater pressure on resources may emerge as demand accelerates in late 2011 and 2012, however. The contraction of potential output from the earthquake could aggravate such pressures for some time to come. Higher wage claims emanating from the construction sector and second-round inflation effects could follow if skills shortages (which according to business surveys were emerging even before the earthquakes) and rising net migration outflows (as employment conditions abroad improve further) were to intensify. Higher immigration to help with the reconstruction could possibly mitigate these pressures. The output gap could also narrow faster than projected insofar as risks to potential output seem mostly negative (see below). Upside risks to inflation would therefore appear to be non-negligible.

The financial system faces considerable exposure

Reflecting relatively low rates of domestic saving, growth in banks' loan books has been financed largely from abroad, principally via funding with maturities of less than one year. Although banks have lengthened the average maturities of their liabilities since the global financial crisis (Figure 1.2, Panel D) and are well capitalised, their heavy dependence

on foreign relatively short-term wholesale funding makes them vulnerable to a disruption in capital flows. The bulk of offshore borrowing is undertaken by a small number of large Australian-owned banks, so the ability to roll over funding hinges in part on the financial health of the Australian banking system. With a large share of bank assets concentrated in property, access to funding also depends on lenders' confidence in the collateral values of NZ properties and the ability of banks to withstand any potential decline in asset values (RBNZ, 2010a). Developments such as further deterioration in domestic demand or falling commodity prices would thus pose a risk to the financial system were they to provoke a significant correction in asset values and erode investor confidence. Fortunately, foreign currency exposures are almost entirely hedged through swap markets, which limits valuation risks from exchange-rate fluctuations.

Although NZ banks fared relatively well throughout the crisis, they were not immune from liquidity pressures and disruptions in global funding markets. However, improvements in funding and liquidity conditions over the past year have enabled the temporary wholesale guarantee scheme and special liquidity facilities introduced during the crisis to be ended. Although the retail guarantee scheme has been extended temporarily, no banks have entered it. In April 2010 the Reserve Bank implemented a new prudential regulation regime requiring banks to hold a minimum level of liquid assets to cover short-term liabilities. A core funding ratio was also introduced, requiring 65% of loans to be sourced from either retail deposits or long-term wholesale funds, with the ratio to increase to 75% over the next two years. Average long-term wholesale funding ratios have roughly doubled since the financial crisis (Figure 1.2, Panel D). These changes should help reduce banks' exposure to short-term disruptions in offshore funding markets. However, high retail and long-term wholesale funding costs have raised bank borrowing costs, and intense competition for retail deposits has widened the spread between deposit rates and the benchmark OCR since 2009 so that for the time being the OCR itself is not representative of the cost of funds to banks. The recent use of the international covered bond market should help increase and diversify the supply of long-term funds available to banks.

The Reserve Bank plans to examine the impact of the Basel III proposals for international macro-prudential standards on capital requirements before deciding whether to adopt them. Because most NZ banks already meet the proposed new requirements for Tier 1 capital, common equity and total minimum capital ratios, and for the conservation buffer, the new standards would not be likely to impose significant costs on banks. The Reserve Bank is of the view that the through-the-cycle approach used by NZ banks to calculate risk-based capital requirements renders the proposed leverage ratio unnecessary. This view is supported by the fact that already conservative lending practices allowed banks to maintain healthy balance sheets throughout the financial crisis. Yet, there is always a risk that models will fail to assign appropriate risk weights, particularly for new financial instruments and in cases where past history may be a poor guide to asset price risk. For example, under the Basel II rules, lower risk weights are applied to residential mortgages than to corporate or other uncollateralised loans, creating strong incentives to expand housing credit (and derivatives thereof), but these collateral values are now at risk while households and farms are highly indebted. A leverage ratio can, in theory, better contain risks linked to overleveraging of the banking system itself. While conservative prudential supervision by the RBNZ has prevented many of the abuses found elsewhere – NZ banks did not engage in complex securitisations of risky mortgages and their aggregate leverage is modest – such a ratio should not be ruled out as a useful counter-cyclical tool to

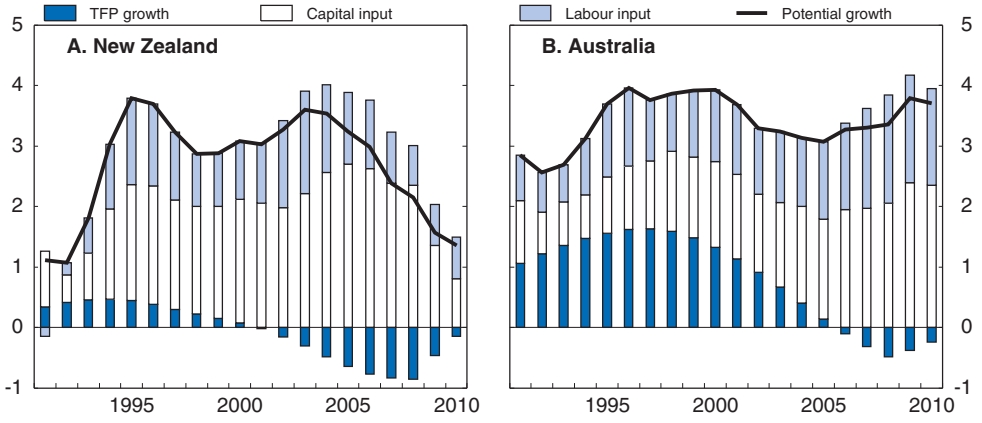
supplement risk-adjusted capital metrics and prevent excessive leverage accumulating in the financial system at some time in the future. Other potential tools to reduce systemic risk such as restrictions on housing loan-to-value ratios are also worth considering, although any non-price measure may entail trade-offs in the form of micro-efficiency costs and disintermediation. Finally, because the banking system is so concentrated (the top four banks own 80% of banking system assets), too-big-to-fail moral hazards pose a fiscal risk. Tightened regulation and more efficient bank resolution mechanisms (as the government is now proposing) are all the more necessary.

The non-bank finance company sector continues to struggle with high funding pressures and loan losses related to property development exposures. The sector has shrunk significantly since the failure of several finance companies over the past several years, which has probably contributed to tighter credit availability particularly in the property development sector, where these institutions served a niche market (RBNZ, 2010b). Recent reforms may help to gradually restore investor confidence in this sector, including the establishment of a prudential framework for non-bank deposit takers to be regulated by the Reserve Bank. The regime includes minimum requirements on liquidity, capital levels and public disclosure. The retail deposit guarantee scheme was extended in September 2009 until 31 December 2011 for those deposit-taking institutions that meet minimum eligibility criteria and choose to enter the extended scheme. One of these institutions, the largest finance company in New Zealand, nevertheless failed in October 2010, triggering NZD 1.6 billion of deposit-guarantee payments by the government.

Potential output has suffered

The global financial crisis has probably resulted in a permanent reduction in most OECD countries' potential output, in part due to capital decumulation, and it may have also led to a rise in structural unemployment, possible hysteresis in labour supply and a fall in total factor productivity (see OECD, 2010, Chapter 4). In New Zealand, however, potential growth as estimated by the OECD had started to decline well in advance of the crisis, starting around 2003 (Figure 1.5).

Figure 1.5. **Components of potential growth in New Zealand and Australia compared**



StatLink http://dx.doi.org/10.1787/888932399411

On the labour side, this slowing in the economy's growth potential could reflect the petering out of earlier reform impacts that had enabled a step-up in participation rates, disincentives from a sharp expansion between 2003 and 2008 of public transfers to working-age people and a tightening of labour-market regulations, declining trend hours worked, plus demographic changes. The largest factor by far was decelerating working-age population in the aftermath of a huge immigration boom in 2002-03 that had temporarily boosted growth potential (possibly house prices as well) (Table 1.3 and Figure 1.4, Panel A). Unusually, there was no corresponding net migratory noutflow in the recession: net inflows even rose, reflecting the global nature of this recession. Hence, the cyclical rise in unemployment to over 7% – a level perhaps lower than in the rest of the OECD but elevated for New Zealand (with its structural unemployment rate estimated at 4%) – partly resulted from immigrants boosting the labour force and firms reducing hours, rather than mass layoffs as in some other countries, thereby avoiding higher structural unemployment and discouraged-worker effects (Table 1.2).

Table 1.3. **Components of labour input into NZ potential output growth**

Annual growth rates

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
a. Trend labour force	0.9	1.5	1.7	1.4	1.2	1.3	1.0	0.9	0.9	0.9
of which:										
Working age population	0.6	1.2	1.4	1.1	0.9	1.0	0.8	0.7	0.8	0.9
Trend labour force participation rate	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.1
b. Structural employment rate	0.2	0.1	0.2	0.3	0.2	0.1	0.1	0.0	–0.1	–0.1
c. Potential employment (= a + b)	1.1	1.6	1.9	1.7	1.4	1.4	1.1	0.9	0.9	0.8
d. Trend hours worked per person	–0.1	–0.2	–0.2	–0.2	–0.3	–0.3	–0.3	–0.3	–0.2	–0.2
Labour input (= c + d)	**1.0**	**1.5**	**1.7**	**1.5**	**1.2**	**1.1**	**0.8**	**0.6**	**0.6**	**0.6**

On the capital side, New Zealand has long faced a relatively high cost of capital. After slowing moderately in the latter years of the boom, capital accumulation plunged in the recession for reasons discussed above, namely a higher cost of capital notwithstanding lower interest rates, reflecting tighter financial conditions and higher risk premia, against lower expected returns to capital. The higher cost of capital in the wake of the global crisis has receded as financial conditions have largely normalised and risk appetites returned.[3] Looking ahead, however, longer lasting impacts of the crisis on the cost of capital may be expected by way of: tighter financial regulation and supervision that restrict the level of global financial intermediation relative to pre-crisis levels; higher demand for credit by the major advanced economies; the return of risk-free interest rates to neutral levels; and New Zealand's high net external debt making its own long-term interest rates more vulnerable to all of the foregoing. Thus, a cost of capital above those found in other advanced economies is expected to continue to weigh on New Zealand's capital accumulation, creating pressure on potential growth on top of that implied by population ageing (Sun, 2010). Record commodity prices will mitigate this effect – as might privatisation and other structural reforms – insofar as they raise capital productivity. The Christchurch earthquakes may have temporarily boosted the scrapping rate, which, until it is unwound by rebuilding, will dampen potential output further.

Monetary and fiscal policies

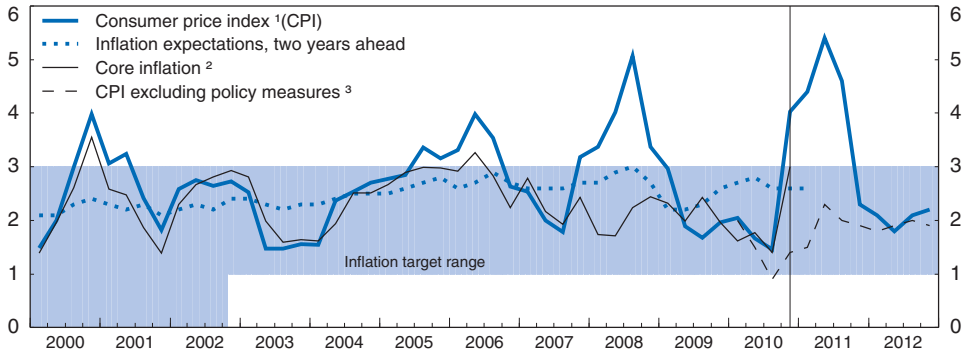
Monetary policy under uncertainty

Policy responses in the cycle

In the early 2000s, the output gap became more positive, leading the Reserve Bank to embark on a substantial tightening cycle in 2004. It culminated with its Official Cash Rate (OCR) at 8.25% in 2007, on the eve of the crisis. Even at this high level of the cash rate, inflation and its future expectations were rising, though core inflation declined (Figure 1.6). The 2008-09 recession produced a shift to a large negative output gap and a decline in core inflation to below the mid-point of the Reserve Bank's target band. Inflation expectations dipped as well. The Bank started to ease in mid-2008 and over the next nine months slashed the OCR to an unprecedented 2.5%.

Figure 1.6. **Inflation, two-year-ahead expectations and core inflation**

Year-on-year percentage change



1. From the first quarter 2011, the CPI projection is that of Reserve Bank of New Zealand.
2. OECD definition; CPI non-food, non-energy.
3. Reserve Bank of New Zealand's December 2010 CPI inflation projection which from the second quarter of 2010 excludes the direct impact of the increase in the rate of GST, the incorporation of the stationary energy and liquid fuel sectors into the amended Emissions Trading Scheme, and increases in the excise tax on tobacco.

Source: Reserve Bank of New Zealand, *Survey of Expectations Database*; *Monetary Policy Statement*, December 2010; and Statistics New Zealand.

StatLink http://dx.doi.org/10.1787/888932399430

Early in the recovery, growth seemed to be picking up roughly in line with past experience, and inflation expectations rose back toward 3%. Thus, in mid-2010, the Bank raised the OCR in two successive 25 basis-point steps and announced its intention to continue to do so steadily. Soon thereafter, however, it became apparent that domestic growth was faltering. The Bank decided in its September review to pause in its interest-rate hikes. Previously it had also signalled that the end-point of the tightening cycle may be at a lower OCR level than in previous episodes. One reason is that retail interest rate-OCR margins have widened for the time being, reflecting both higher risk aversion and tighter bank liquidity regulations following the recession, which has effectively lowered the neutral rate of the OCR compared with the past. In addition, it is likely that lower retail lending rates will be required in the coming few years than was the case during the leveraging up of the previous two decades.

Largely in response to the Christchurch earthquake, on 10 March 2011 the Reserve Bank reduced its policy interest rate by 50 basis points to 2.5% as an "insurance" step to limit the risk of a sharp sustained and widespread fall in confidence nationwide, thus

reversing the 2010 hikes. However, the Bank made clear that it did not envisage making further cuts on the information available at that time and that the timing of the reversal of this change would depend on the pace of recovery and the extent to which the confidence risks were judged to have dissipated. The Bank further noted that the earthquake rebuild would put considerable pressure on resources and projected that interest rates would eventually need to rise to around the same levels envisaged in December to ensure that medium-term inflation remained comfortably within the target range. Assisting the easing of monetary conditions, the exchange rate had already depreciated by 3½ per cent against the US dollar on account of the weaker economic outlook and in anticipation of the interest rate cut. The disastrous Japanese earthquake of 11 March then put further temporary downward pressure on the exchange rate and dairy prices, while adding to international economic uncertainties.

The Bank will face important decisions in the period ahead. There is still some question of what the neutral OCR might be, though it is now estimated at about 5 per cent. The OECD foresees little change in underlying inflation over most of 2011, given the persistence of a negative output gap. There are, however, headline price pressures as noted above. The negative supply shock of the earthquakes and rising global raw materials prices pose an added inflationary risk. These might give rise to second-round wage pressures if labour markets were to tighten unexpectedly in a context of growing pressure on construction inputs. The timing regarding the optimal eventual tightening of monetary policy is therefore subject to great uncertainty. The Bank must time its actions appropriately, given structural changes in the financial markets. At the same time, the pace and extent of reconstruction are extremely uncertain, though the Bank has scope to react more quickly to inflation threats than in the past, as the average mortgage maturity has fallen in response to steepening of the yield curve. Preliminary updated OECD projections suggest that it would be best to hold off on any removal of monetary stimulus for some time. Based on such a scenario, by the end of 2012, as rebuilding intensifies, rates may need to reach a level that will clearly slow the momentum in the economy for inflation to stay within reasonable bounds. Such a level may be as high as the 5% assumed to be the new neutral rate.

The policy framework

Consumer prices rose by 2.6% per annum on average over 2000-07, and core inflation was consistently above the mid-point of the target band as well. A sharply rising exchange rate over the same period implied low import price increases, but domestic goods price inflation surged to over 4%. There is a danger that the credibility of the 2% implicit target has been eroded and that inflation expectations may become entrenched near 3%. There may be lessons for the conduct of monetary policy, for instance, to put greater emphasis on the mid-point of the target band in its policy statements and actions. The Bank's prudential policies may be able to lend some limited support to its stabilisation policies by doing more to prevent asset bubbles. For example, the new bank liquidity requirements, besides providing protection to banks during a possible future global funding crisis, could also help to restrain the overheating of housing markets by regulating banks' short- term borrowing abroad. Higher capital, and leverage, ratios could provide similar buffering against large cyclical swings, although NZ banks already appear to satisfy the proposed Basel III ratios.

Monetary policy also needs better support from fiscal and structural policies. Over the 2000-08 period, the housing price boom, encouraged by both tax and local authority

regulatory policies (Chapter 2), implied consumer wealth effects that exacerbated demand pressures, forcing monetary policy to tighten. The product-market regulatory environment also deteriorated (Chapter 3), involving more government involvement in the economy, and resulting increases in rigidities lowered total factor productivity growth and hence potential output. Later in the same period, public spending swelled and labour- market regulations were tightened (higher minimum wage and tighter dismissal rules) in an overheating economy with protracted low unemployment, contributing to wage pressure and rising non-traded goods price inflation. This further increased the burden on monetary policy to stabilise the economy. High domestic interest rates drew in foreign capital, entailing further upward pressure on the exchange rate, aggravation of the current account deficit and net national indebtedness.

Fiscal consolidation

Macro vulnerabilities call for faster consolidation…

Historically large private-sector financial imbalances were partly offset by a string of government surpluses since 1994, but fiscal deficits have reappeared since the recession. In 2009 and 2010, the injection of demand into the economy by government tax and spending measures, mostly initiated before the global economic downturn rather than being direct responses, more than offset the withdrawal of domestic demand due to private deleveraging. The government suddenly became a net contributor to the external debt build-up and current account deficit (Figure 1.2, Panel B, and Table 1.2).

While keeping demand afloat via fiscal deficits in New Zealand and elsewhere in the aftermath of the financial crisis may have been necessary to prevent a downward global spiral, the financial market has now shifted its focus from banking troubles to sovereign debt burdens, so far largely in some European countries. The NZ government thankfully has no worrying sovereign debt burden, both because of its low debt going into the crisis and its lack of any need for bank bailouts afterwards. Nevertheless, given that New Zealand's overall macroeconomic imbalance bears some resemblance with those in Spain and Ireland (Figure 1.3), a negative current account surprise could push it even closer to their predicament. A warning sign is given by OECD and Treasury (2010) projections, both indicating, at current exchange rates, a reversion toward high and unsustainable levels of the external deficit as recovery proceeds (Table 1.2). Two rating agencies currently have the NZ sovereign credit rating on negative outlook on account of the country's high external debt. The main protection that New Zealand has against such risks is its strong reputation for fiscal probity, which must at all costs be preserved. Structural reforms to raise private saving rates will be important, yet of uncertain efficacy, so that fiscal consolidation is the surest way to raise national savings. Population aging will imply a structural reduction in private saving rates and a long-run need to continue to increase public saving over and above the direct impact of aging on public finances.

The key fiscal policy challenge is therefore to ensure a sufficiently fast return to a strong fiscal position. The updated 2010-11 budget (English, 2010) foresees a return to fiscal balance by 2014/15 and surpluses in the neighbourhood of 2% of GDP (considered a minimum needed to resume NZ Super Fund contributions, which were suspended after the crisis) a few years later. The main instrument to attain this goal will be a ceiling on new primary current spending. With the economy in a delicate state, the government may be rightly concerned about imposing fiscal pain on it too rapidly for fear of jeopardising the

recovery. Yet, 2018 seems late to get back to "minimum" surpluses, especially since monetary policy still has headroom for action.

The shift in the policy mix implied by continued monetary support coupled with strong fiscal consolidation would also help to relieve pressure on the currency and restore a measure of international competitiveness. As the Reserve Bank (in its December 2010 Policy Assessment) put it, "Accelerated elimination of New Zealand's fiscal deficit could help improve national savings, thereby easing current pressures on interest rates and the New Zealand dollar, and reducing New Zealand's dependence on international borrowing". The budget should therefore aim at achieving surpluses higher than 2% as a medium-term target, which might be needed to keep the current account at a sustainable level and thereby to affect exchange rates, including via expectations. A main channel for the current-account effect is downward pressure on interest rates, because of less government crowding out, and eventually stronger growth that in turn raises imports. However, econometric evidence points to less than one-for-one impacts of fiscal deficits on the current account, and a ⅓ to ½ offset due to private behavioural responses is often found. To shrink the medium-term current account deficit from 7% of GDP (as projected by Treasury currently) to around a 5% ceiling required for external debt sustainability (under Treasury's assumption of 5% potential nominal growth), this suggests that the medium-term fiscal surpluses might need to be 2-3% of GDP higher than currently projected. Lower potential growth would reduce the sustainable current account deficit and thus raise the requirement, and conversely.

Yet, different means of consolidation may produce different economic impacts. According to one study, cuts in transfer payments to middle-class households may have the lowest short-term cost and produce the largest permanent gain in GDP; cuts in public consumption and increases in consumption taxes have smaller long-term benefits for GDP, yet all three produce similar current account offsets of about half (Schule, 2010). Hence, the desired consolidation should be achieved primarily by means of cuts to middle-class cash transfers that have greatly expanded in recent years and been a major source of spending pressure. Insofar as higher spending is needed to upgrade the nation's infrastructure or to support innovation, the burden on cuts to less efficient forms of spending will be all the greater. Since government investment is already high (see Figure 1.9), it should be possible to achieve efficiency savings within the investment budget itself, as the government is considering. Public-sector employment *(e.g.,* teachers) surged over the 2000s, and a slimmer public workforce may be warranted. Greater use of environmental taxes remains a particularly efficient way to raise revenues while meeting environmental goals (Chapter 4).

... and more binding institutional constraints

The government's focus on debt and operating balance rules via an "operating allowance" – a medium-term annual ceiling on new discretionary current spending and revenue initiatives that is contingent on projections of other spending (notably entitlements but also some other spending), debt service and revenues – allowed it to enter the crisis on a solid footing. However, it did not prevent an increase in spending during the "good times", which is now hampering its ability to rein in the deficits. Under the operating allowance rule, *ex post* overshoots in entitlement spending relative to budget estimates form part of the following year's baseline, to which the future discretionary spending allowance then applies. Positive revenue surprises during booms, on the other hand, often cause the spending allowance to be revised upward, particularly if the surprises are seen to

be structural. These two biases explain much of the strong growth in structural spending in the years prior to the recession, while the need for discretionary stabilisation entailed further upward pressure afterwards.

OECD (2009) recommended that the government adopt a global spending rule to address the problem of pro-cyclical spending during booms, which – as recent events have shown – reduces the buffer available for cyclical downturns or to prefund the needs of an ageing population. Between budget years 2003-04 and 2009-10, core Crown spending increased by some 5 percentage points of GDP (6 points including capital spending), under the prevailing debt rule.[4] Though all spending items have risen, the main pressures have been exerted by health, education, justice and capital, reflecting government priorities (Table 1.4). Social security and welfare, and economic services have surged over the last several years, reflecting both rising unemployment benefits and higher-than-expected uptake of recently established benefits (*e.g.* Working for Families (WFF) and KiwiSaver). In 2008, emphasis shifted toward tax cuts as a way of reducing surpluses, notably through reducing top personal and corporate income tax rates in a phased manner over several years. As a result of these measures, the structural fiscal surplus began to shrink in 2007 and then much more significantly as of 2008 – as it happened, providing most of the needed policy support during the recession. According to OECD estimates, the cumulative fiscal stimulus from 2007 to 2010 was around 5½ per cent of GDP. But, unlike discretionary measures designed for the express purpose of stimulus, these were intended to be permanent.

Table 1.4. **Crown expenditure**

Percentage of GDP, year ended June

	2003	2004	2005	2006	2007	2008	2009	2010
Social security and welfare	10.3	9.8	9.5	9.6	9.8	9.8	10.5	11.2
of which:								
NZ Superannuation	4.2	4.1	3.9	4.0	4.0	4.0	4.2	4.4
Income support and unemployment benefit	2.1	1.8	1.5	1.4	1.2	1.1	1.1	1.4
Invalidity, sickness and disability benefits	1.2	1.2	1.2	1.2	1.1	1.1	1.2	1.3
Family and in-work tax credits	0.7	0.7	0.6	0.9	1.3	1.3	1.4	1.5
Health	5.6	5.6	5.7	5.9	6.0	6.2	6.7	6.9
Education	5.2	5.2	5.1	6.1	5.4	5.2	6.2	6.2
Core government services	1.6	1.4	1.7	1.5	2.8	1.8	2.9	1.6
Law and order	1.3	1.3	1.3	1.4	1.6	1.6	1.7	1.7
Defence	0.9	0.9	0.8	0.9	0.9	0.9	0.9	1.0
Transport and communication	1.0	1.0	1.1	1.1	1.4	1.2	1.4	1.2
Economic and industrial services	0.8	0.8	0.9	1.0	0.9	1.6	1.5	1.5
of which: KiwiSaver	. .	. .	. .	. .	. .	0.6	0.6	0.5
Heritage, culture and recreation	0.4	0.4	0.6	0.6	0.5	0.6	0.5	0.7
Other services	2.1	1.9	1.9	1.9	1.8	1.9	1.8	1.7
Finance costs	1.8	1.6	1.5	1.5	1.4	1.3	1.3	1.2
Total core Crown expenses	**29.6**	**28.8**	**29.1**	**30.5**	**31.4**	**31.1**	**34.5**	**33.8**
Crown entities, SOEs and eliminations	9.2	8.1	8.7	9.3	8.6	10.3	10.5	9.0
Total Crown expenses	**38.8**	**37.0**	**37.8**	**39.7**	**40.0**	**41.4**	**45.0**	**42.8**

Source: The Treasury (2010), *Financial statements of the Government of New Zealand.*

The May 2010 budget maintained the operating allowance as the principal consolidation tool. To achieve deficit reduction, the budget set the annual allowance at NZD 1.1 billion for 2010/11, growing by 2% per annum over the remainder of the five-year budget horizon; this compares with *ex post* allowances often two to three times as large in the past (Mears

et al., 2010). Capital spending as set by a capital allowance was fixed at NZD 1.39 billion per year as opposed to NZD 2.1 billion on average over 2000-08. The budget also introduced a GST increase to help pay for the income tax cuts in a growth-friendly manner (see Table 1.7). Notwithstanding these measures, the December budget update showed that, even prior to the second (February 2011) earthquake, the 2010-11 deficit was expected to be substantially higher than initially budgeted (by some 1 percentage point of GDP), mainly due to one-off earthquake related costs (NZD 1.5 billion, all booked to the 2010/11 year), higher-than-planned expenses associated with the Weathertight Homes package and lower-than-expected revenues (notably from corporate taxes). Each of these items lay outside the spending allowance, revealing once again the potential for leakage from the narrowly-defined rule.

To stay on track with consolidation plans, the government has recently indicated there will be no net increase in policy spending in budget 2011, with any increase in policy spending in areas like health and education offset by savings in other areas. It has also set aside a portion of each year's operating allowance for managing the impact of net risks stemming from budget items outside the annual allocation, notably entitlements such as KiwiSaver. Henceforth, higher-than-expected growth in such items (or negative revenue surprises) is more likely to be offset by greater restraint in other spending. If these expenses turn out to be lower than forecast (or there are upside revenue surprises), the unused buffer is to be used for faster deficit reduction, rather than spent. Furthermore, demand and cost pressure associated with education is to be brought inside the operating allowance. As the allowance will be targeted on government priorities, most departments will receive no new funding, requiring efficiency savings and reprioritisation of existing expenditure. A procurement reform and better Crown asset management is to identify additional cost savings. This approach would allow the budget to return to balance earlier, and to keep net debt under 30% of GDP (gross debt under 40%), despite the near-term deficit overshoot (English, 2010; and Key, 2011). The expanded coverage of the operating allowance and inclusion of a risk buffer represent improvements upon past practices. However, the new rule is somewhat convoluted and difficult to explain, and potentially subject to reversal. Its major attraction is that it keeps the high-profile operating allowance anchor intact, which may be necessary to avoid confusion.

The reduced 2011 spending allowance pales against earthquake-related costs of some NZD 9 billion, implying unavoidable budget deterioration in the near term (Table 1.2). Nevertheless, it will be important to maintain the medium-term target of achieving a surplus by 2014-15 by stepped up spending and tax reforms. The government has, in a positive development, stated its intention to identify budget savings of a structural nature, including those considered heretofore politically sensitive, so as to maintain former debt targets (Box 1.1). The 2011-12 budget should go further to specify a spending rule that subjects all current and capital outlays to a comprehensive growth cap, with possible exclusions for cyclical items such as unemployment insurance and one-offs such as natural disasters or major economic shocks akin to that of 2008-09. The operating allowance could be kept to meet the net debt objective, while being made coherent with the spending cap. Exogenous overshoots in entitlements would need to be offset by cuts in discretionary items or by adjusting the parameters of the entitlements themselves within a multi-year framework. A margin for flexibility to deal with fiscal risks should be allowed, with unused margins used for debt reduction or (in the future) tax reductions. Some

safeguards would need to be taken against circumventing the rule, such as by increasing tax expenditures. Local authorities should be encouraged to adopt similar rules.

Creating an independent fiscal watchdog could buttress adherence to the rule by promoting informed public discussion of the larger implications of fiscal initiatives and thereby making politicians more accountable to voters (Hagemann, 2010). The NZ Treasury to some extent already fulfils such a role as a government agency, given the requirement to provide the Finance Minister with independent macroeconomic and fiscal forecasts. Despite the high quality and undisputed objectivity of its work, it is answerable to the Minister of Finance. An independent and authoritative fiscal council could provide for stronger checks and balances on government, which is recommended more generally for New Zealand (Chapter 3). The council would have no need to duplicate forecasting and detailed budget analysis already performed by Treasury. Rather, it could usefully complement the budget process by monitoring performance under the fiscal rule, evaluating the quality of budget policy, providing checks on the full costing of new policy measures and engaging the academic community in these endeavours. Currently, there is little independent analysis of budget policy, and this does not seem to be a major pursuit in academic circles, perhaps because the fiscal situation has long been so good. Revenue forecasts were overshot by a large margin in the last boom, though this was true in many OECD countries experiencing equity and/or commodity price booms, as were projections of take-up rates for new middle-class social programmes to spend revenues mistakenly believed to be permanent. More external constraints on policy myopia appear to be needed (a fund to park extraordinary revenue fluctuations could also be envisaged). Though New Zealand has not suffered from the same deficit biases as most other countries in need of fiscal councils, as a country with a structural external deficit it still faces challenges. The council's role may become especially relevant once the fiscal situation improves, but fiscal surpluses need to be maintained in light of macroeconomic and long-run risks and burdens that may weigh on political will. Sweden offers an interesting model (Box 1.2).

Box 1.2. **Independent fiscal watchdogs: Lessons from the Swedish experience**

There has been a recent trend in OECD countries toward establishing independent fiscal watchdogs (Sweden in 2007; Canada and Hungary in 2008; Slovenia and the United Kingdom in 2010), inspired by earlier similar institutions (*e.g.* the US Congressional Budget Office). The Swedish fiscal council has played a constructive role in fiscal policy, while on a small budget, and could be pertinent to a country like New Zealand. Each country's unique circumstances, though, must determine how these bodies can best be designed to strengthen incentives for fiscal discipline.

Raison d'être. The choice of fiscal institution depends on the underlying problem it is meant to address. Deficit bias and excessive debt build-up commonly result from politicians' myopia under limited periods in office, minority coalition politics in parliamentary systems, or insufficient checks and balances within government and civil society. The specific problems may include: politicians acting in their own interests (rent-seeking on behalf of constituencies or influential interest groups, pro-cyclical and pre-election spending); common pool problems (lack of internalization of externalities, median-voter syndrome, wars of attrition over budget consolidations); short-sightedness and time inconsistency of policies (too little weight on the future and unintended effects

Box 1.2. **Independent fiscal watchdogs: Lessons from the Swedish experience** *(cont.)*

like moral hazard); and/or fiscal opacity (insufficient understanding of the inter-temporal budget constraint and over-optimism about risks).

Fiscal rules and objectives. Modern democratic societies have adopted fiscal rules to tie politicians' hands. The ultimate objective of the rule can be long-run fiscal sustainability, tax smoothing, intergenerational equity or precautionary savings to provide room for manoeuvre for stabilisation policies or other unforeseen claims on public finances. According to Calmfors (2010), such higher-level objectives are rarely specified (even in Sweden) but should be, as they motivate different types of fiscal rules and numerical targets, while ensuring their longer-run legitimacy. They should take into account trade-offs with other social objectives, such as the retirement age. The rule then expresses the intermediate target needed to attain the higher-level, socially agreed objective. A key trade-off in the formulation of fiscal rules is between credibility and scope for discretionary flexibility. Sweden has opted for substantial flexibility with a through-the-cycle surplus target and a yearly 1% margin around a comprehensive expenditure ceiling.

Role of the fiscal council. Fiscal councils can help enforce adherence to rules. They typically have an advisory or monitoring role that can have a direct disciplining effect. They increase awareness of future costs of current deficits, offset tendencies to underestimate risks by providing analysis, promote debate and encourage academic attention to fiscal policy issues (diluting a small-country government's possible monopolisation of fiscal expertise). With sufficient visibility and prestige, councils can also deploy 'soft power' in the form of reputational costs to policy makers.

Scope of tasks. This depends on pre-existing institutions in the country. The Swedish fiscal policy council does not engage in macroeconomic forecasting or detailed budget projections, reflecting the existence of other government agencies with an acquired reputation for independent analysis (like the NZ Treasury). It rather specialises in broader evaluations of fiscal policy of a less-routine nature with heavy academic input, including clarity of policy proposals and their motivations, *ex post* evaluations of whether fiscal policy has met its targets, analysis of its long-run sustainability, and (more unusually for a fiscal council) normative policy recommendations. The council's remit extends to structural policies that interact with fiscal policy, which increases its visibility and its relevance to the public, while obviating the need for multiple oversight agencies in a small country.

Independence. A high degree of independence from the political system, akin to that of the central bank, is necessary for the council's credibility. Assured funding for a number of years and sufficient tenure for council members can also help. In a small country, where everyone knows one another and there is a revolving door between private and public sectors, it may be difficult to find truly independent voices. One safeguard in Sweden has been to appoint a foreigner (from Denmark) as council vice-chair. There may also be a shortage of the requisite expertise outside government. Former politicians or retired high-level bureaucrats can usefully serve as council members.

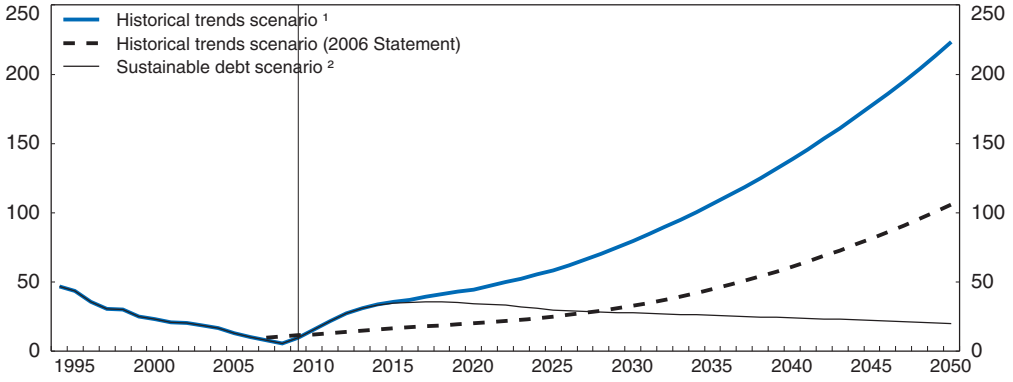
Influence. Having official status greatly enhances the influence and effectiveness of the fiscal council, though in the longer term it must be earned through the quality of its analysis. A solid reputation engages the attention of the press, making the council's work more visible and harder for politicians to ignore. It also helps to be unique: too many watchdogs could dilute the influence of each (as may be the case in Germany). The Swedish council has managed to gain substantial influence on a small budget, with its four full-time staff academics and eight part-time council members, though its resources may now be over-stretched.

Source: Draws extensively on Calmfors (2010).

The long-term fiscal picture has worsened

The NZ Treasury produces a long-term fiscal statement at least once every four years as part of the government's efforts to promote fiscal transparency. Under the historical trends scenario, the 2009 exercise indicates a sharp rise in the 2050 projected debt level, to 220% of GDP from 30% now. This represented a sharp deterioration from the long-term projections of three years earlier when deficits had not been expected to emerge until 2035 (Figure 1.7). Half of this deterioration reflected lost ground in the intervening economic downturn, and the other half policy impacts, both new measures (*e.g.* income tax cuts net of GST increases) and higher-than-expected uptake of previous measures (*e.g.* KiwiSaver and Working for Families). While the endpoint for debt in 2050 is sensitive to the starting point, and thereby current economic and policy developments, successive statements reveal the emergence of persistent primary deficits under the historical spending trends assumption.

Figure 1.7. **Net debt**
(Excluding NZ Super Fund) – As a percentage of GDP



1. Beyond the budget horizon, this scenario takes current legal obligations for entitlement spending as given and projects the last 20 years' average annual growth for other public goods and service provision (0.8% per year for the overall basket).
2. This scenario is based on the government's stated fiscal strategy.

Source: The Treasury (2009), *Challenges and Choices*, New Zealand's long-term fiscal statement, October.

StatLink http://dx.doi.org/10.1787/888932399449

To provide a buffer against risks, the 2009 long-term fiscal statement assumes a trend decline in the net debt to 20% of GDP by 2050. A wider definition, from which the net debt target can be derived, is to maintain positive government net worth including its stock of assets and the present value of primary revenues less expenditures (Table 1.5). There are of course various ways by which such a sustainable debt path can be attained, but the key point is that the policy effort as indicated by the 2009 exercise is achievable. In the scenario based on historic spending trends, the primary balance declines to –6% of GDP by 2050 whereas the overall balance falls to –16%, the difference being debt service. Because the NZ interest rate is so high (reflecting the savings gap), debt dynamics are particularly adverse. Hence, modest improvements in the primary balance can imply large savings for the overall balance.

The Treasury calculations show that a tax-financed adjustment of the primary balance needed to achieve debt sustainability would require an across-the-board personal income tax rate increase of 5.5 percentage points or else a GST increase to 20%. Neither of these extremes is desirable. The first would surely harm growth and undo the achievement

Table 1.5. **Public spending and net worth: Sustainable debt and historic trends**

	2009	2050 historical trends	2050 sustainable debt
A. Spending (per cent of GDP)			
New Zealand superannuation[1]	4.3	8.0	8.0
Benefits[1]	6.5	3.6	3.6
Health	6.9	10.7	8.1
Education	6.4	5.4	4.1
Other	10.3	8.8	6.8
Debt servicing	1.4	12.7	1.5
B. Comprehensive balance sheet (NZD billion, 30 June 2009)			
GAAP net worth		99	99
Present value of primary revenue[2]		960	960
Present value of primary expenditure[1, 2]		1 104	960
Comprehensive net worth		(45)	96

1. Based on current legislation.
2. A nominal discount rate of 10% is used to calculate these present values, assuming an infinite discount horizon. The fiscal projections to 2050 are extended by projecting final year growth rates in primary revenue and expenditures forward.

Source: The Treasury (2009); Irwin and Parkyn (2009).

of the recent tax switch that increased incentives to save. The GST increase would be less distortive but would worsen equity and might therefore raise pressure to create exemptions to the tax base. In the absence of pension and benefit reform, discretionary fiscal spending would have to bear the brunt of the adjustment (Table 1.5, Panel A). Per capita real spending on public services (notably health, education and justice) would have to remain virtually unchanged between 2013 and 2050 (first falling some 10% in real terms by maintaining the NZD 1.1 billion allowance until 2025, then keeping spending fixed in real per capita, age-adjusted terms). Over the same time span, NZ Superannuation payments would rise 66% in real per capita terms because of their indexation to wages.

Spending reform is urgent

New Zealand's universal pension system provides relatively high benefits compared to those elsewhere, with an estimated average minimum retirement income equal to 38% of average earnings, compared to the OECD average of 29% (OECD, 2007). NZ Superannuation is a flat-rate defined-benefit scheme that enables pensioners in the lowest 40% of the income distribution to maintain the same level of consumption (Scobie *et al.*, 2004), thus acting as a disincentive to private savings for almost half of the population. The fiscal cost of the scheme remains low at 4.4% of GDP in 2009, *versus* the OECD average of 7.2%, but is expected to increase as the population ages to around 8% of GDP. Better targeting of pensions on people with lower incomes may help to boost private precautionary saving in addition to providing fiscal savings. The biggest long-run saving, though, would arise from indexing pensions to the CPI, as working-age benefits already are, or at least going part-way to this goal (as proposed in the *2007 OECD Economic Survey*, or through indexation to CPI + 1% as modelled in Treasury, 2009).

There is scope for curtailing social benefits, particularly in inefficient and often inequitable, albeit popular, middle-class transfer programmes, *viz.* untargeted interest-free student loans, 20 hours per week of free child care and KiwiSaver subsidies; high abatement threshold levels for WFF and universal guaranteed minimum pensions; and universal free health care (income-contingent co-payments were abandoned in the 2000s).

Value-added tax increases should be used only after other options to curtail such spending have been exploited. Or they should form part of an efficiency-enhancing package of GST and/or environmental tax increases, further income tax cuts, and a refocusing of welfare transfers to the needy. Though this may raise marginal effective tax rates at lower incomes, a political trade-off against present deadweight costs and budget risks will have to be made.[5] Indeed, the government has already decided, in the 2010 budget, to freeze the upper income threshold for withdrawal of WFF income tax credits (currently set at NZD 110 000) in nominal terms, in line with recommendations made in Treasury (2009). Insofar as fiscal affordability requires more targeted benefits, the recommendations of the Welfare Working Group (Welfare Working Group, 2011) to encourage the return of benefit recipients to the workforce should be seriously considered.

There is also potential for savings in the provision of health, education and justice, which will require "value for money" reforms on their part (see OECD, 2009 for a discussion of health and Treasury, 2009, for justice). The difficulty here is that a number of vested interests – *e.g.* public-sector employees and private-sector providers of public services – are likely to raise resistance. The government is nevertheless determined to go in this direction and has started an ongoing baseline spending review.

Balance-sheet management to contain fiscal risks

The government publishes its balance sheet and has newly added an investment statement so as to further promote fiscal transparency. The government's social and commercial (mainly physical) assets are valued at the equivalent of 86% of GDP (Table 1.6). It has vowed to better manage these assets insofar as their rates of return typically fall short of private-sector benchmarks. This may suggest slower expansion of the asset base, or an opening to at least partial privatisation as a spur to improved performance, which the government has announced it is considering. By far the largest asset holding is that of social assets, mainly public housing but also schools, hospitals and roads. There is significant scope for better capital allocation in this sphere. Chapter 2 discusses social housing in a context of housing market distortions, while Chapter 3 discusses problems with SOEs and their role in creating more efficient product markets. Chapter 4 elaborates on the better use of natural capital, which is mostly unvalued and does not appear in the customary inventories of national wealth, even though it lies at its very basis.

Table 1.6. **Crown assets and liabilities**
Year ending June, 2010

	NZD billion	Per cent of GDP
Social	111	58.6
Commercial	52	27.5
Financial	60	31.7
Total assets	223	117.8
Liabilities	128	67.6
Net worth (GAAP)	95	50.2

Source: The Treasury (2010), *2010 Investment Statement of the Government of New Zealand*, 14 December.

The current value of net worth can also be assessed in the longer-term context of so-called comprehensive net worth as in Table 1.5, Panel B (Irwin and Parkyn, 2009). Comprehensive net worth combines the conventional measure of net worth that meets

accounting regulations (GAAP), as just discussed, with other resources and obligations relevant to fiscal risks, notably the power to tax and the implicit obligation to provide social services. The present value of these fiscal rights and duties can be directly added to the stock of marketable assets that the government owns. Under the historical spending trends scenario, the implicit liabilities of ageing and continuing growth in the provision of services like health care easily outweigh the claims government has on present net assets and future taxes, implying an unsustainable fiscal situation (as in many other OECD countries). The sustainable trends scenario is based on the government's fiscal strategy, which provides what may be considered as a cushion of positive net worth to face future risks. Such risks are large. According to preliminary risk modelling by the Treasury (Irwin and Parkyn, 2009), the Crown's estimated comprehensive loss from the 2008-09 recession of about NZD 48 billion has an annual probability of 2.5%, that is, a shock this bad could be expected about once every 40 years. To macroeconomic risks should now be added uncertain international obligations under climate change policy, although the potential to develop mineral assets may offset some of these risks if their environmental impacts can be satisfactorily addressed (Chapter 4).

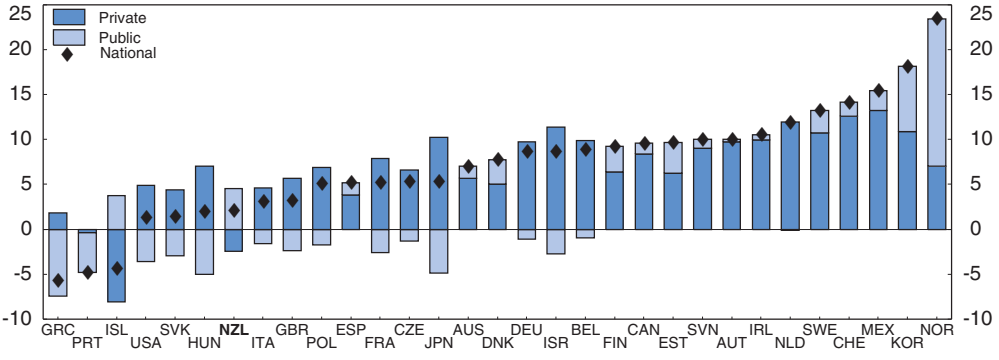
Structural factors behind macroeconomic imbalances

Low national savings rates

Large saving-investment imbalances have persisted for a long time, suggesting a role for structural factors. Net national saving rates have remained well below the OECD average for over a decade, driven initially by low private saving rates. After improvements in government balances raised national saving rates for a period between 2000 and 2003, the trend reversed in 2004 as private saving rates turned negative, an outcome shared only with Iceland among OECD countries (Figure 1.8). Meanwhile, stronger investment rates in recent years have reflected buoyant residential construction and public capital spending, in part to accommodate comparatively high population growth, whereas private business investment has under-performed compared to other OECD countries for most of the time since the mid-1980s (Figure 1.9).

Figure 1.8. **Net saving rates**[1]

Average 2004-09, per cent of GDP



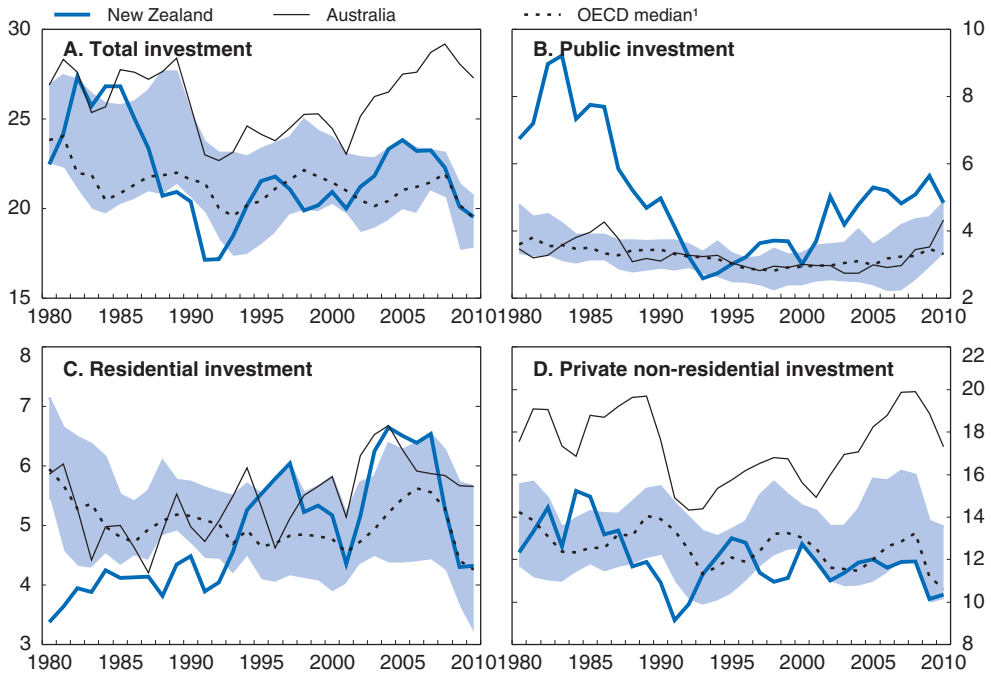
1. Gross saving adjusted for depreciation.

Source: OECD *National Accounts Database*.

StatLink http://dx.doi.org/10.1787/888932399468

Figure 1.9. **Investment rates**

Per cent of GDP



1. The shaded area is the OECD range of 25th to 75th percentile. Half of the countries lie inside this range.

StatLink http://dx.doi.org/10.1787/888932399487

Low levels of national saving have probably contributed to high interest rates in New Zealand.[6] High interest rates push up the cost of capital and restrain the rate of domestic business investment. Part of the foreign funding of the savings-investment gap has been inward foreign direct investment (FDI). A sizeable number of firms have been acquired by foreign investors who have the advantage of a lower cost of capital (The 2025 Taskforce, 2009). As a result, over one-third of the country's stock of net foreign liabilities reflects direct investment capital employed in NZ-domiciled firms that are owned or controlled from abroad (Figure 1.2, Panel C), most notably Australia.[7] This share of the net international investment position is likely to persist, given its longer-term nature. However, the remaining two-thirds reflects for the most part overseas debt and other liabilities, which together have grown by about 20 percentage points of GDP since 2001.

The lack of depth in New Zealand's financial markets is symptomatic of low saving levels, although the causality probably runs in both directions. Domestic capital markets are relatively shallow by advanced economy standards. Having peaked at over 50% of GDP in 1997, stock market capitalisation shrank progressively to reach 25% of GDP in 2009, whereas in Australia it swelled from 70% of GDP to 180% over the same period. Small and relatively illiquid stock and corporate bond markets may limit the economy's capacity to allocate capital efficiently and respond to new technological opportunities that drive productivity growth (OECD, 2007a). Their shallowness may be related in part to the prevalence of small businesses that lack the scale to attract foreign capital, making bank debt or private equity the most cost-effective financing option. Firms that grow beyond a certain size are often acquired by foreign corporations that then choose to publicly list offshore. Furthermore, state-owned enterprises (SOEs) and cooperatives with no listed

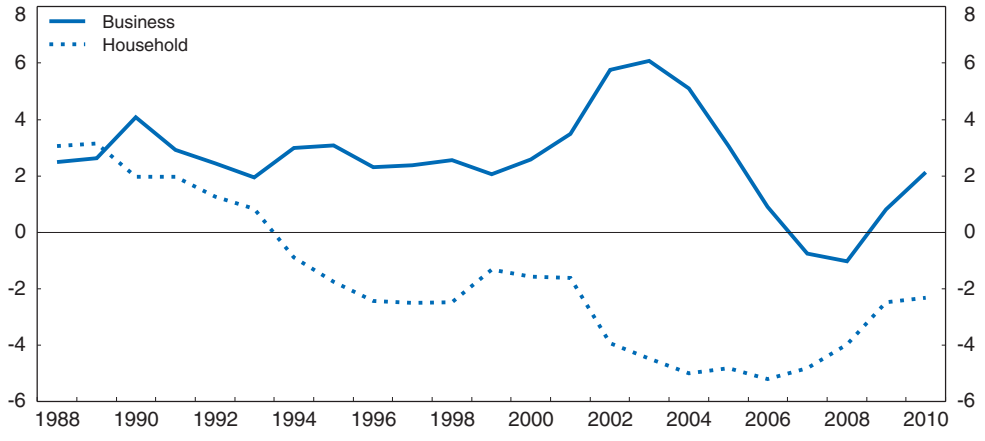
equity comprise a significant share of the business sector. A recent study (Morningstar, 2011) suggests that an unfavourable tax structure and disclosure and regulation regime may discourage fund investments in New Zealand. Shortfalls in industry standards for disclosure and financial advice are well recognised, and the government has implemented numerous financial-sector reforms to address these issues over the last few years. For example, a Financial Markets Authority will replace the Securities Commission and some functions of the NZX in order to oversee financial-market conduct and securities regulation as well as to improve financial literacy among the public.

Factors contributing to imbalances

There may be several factors behind chronically low private savings and business investment, many of which are inextricably linked and related to the country's poor growth outcomes relative to other OECD countries (Chapter 3). However, the reasons for NZ's poor productivity performance are not entirely clear. Recent OECD work (Barnes *et al.*, 2011) finds that NZ's labour productivity growth has trailed substantially below what would be predicted based on its structural policy settings. One possible contributor to low savings is that households with the financial means have tended to concentrate their portfolios in property, land and other consumer durables, acquired through higher indebtedness. This may stem in part from Ricardian effects of government spending decisions and a tax system that diverts wealth towards housing and land, combined with supply restrictions that increase the price and funds required to do so (Chapter 2).[8] Underdeveloped domestic capital markets and weak domestic profit opportunities have further limited available options for wealth creation, leaving property to be the savings vehicle of choice. The reduced propensity to save places upward pressure on interest rates, with some potential crowding out of business capital accumulation. While household saving rates had become negative already in the early-1990s, rising asset values and perceived wealth gains from the recent property and land price boom further pushed household saving rates to new lows (Figure 1.10). Business saving rates also began to fall precipitously during this last cycle.

Figure 1.10. **Private-sector saving rates**

As a percentage of national disposable income, 3-year average



Source: Savings Working Group (2011).

StatLink http://dx.doi.org/10.1787/888932399506

A lack of profitable opportunities domestically may weigh on business-sector saving. NZ firms appear to have significantly higher dividend payout ratios than other countries (Charles River Associates, 2003), which could result from the imputation system but may also mean that the rewards to reinvesting earnings are perceived to be low. This could reflect to some extent size and distance disadvantages that provide a natural shelter from competitive pressures to be efficient and innovate, while the high cost of capital may also reduce the returns to undertaking investments. Businesses have also faced higher tax rates than the OECD average since 2001, and this disadvantage widened until 2007 as corporate tax rates trended downwards in most other countries but remained unchanged in New Zealand (OECD, 2009). While the corporate tax rate is being lowered to 28% in 2011 (in line with Australia's plans), it remains higher than the 2010 OECD average of 26%. The company tax rate is most important in influencing the supply of capital from non-residents, while the personal tax rate may affect the supply of capital from residents. The 2010 tax reform reduced both the personal and company tax rates while broadening the tax base (particularly with respect to depreciation deductions), improving neutrality without increasing effective tax rates on capital income.

Other potential factors limiting domestic investment opportunities may include instability and uncertainty in the regulatory system, including a lack of transparency in government regulatory interventions. As discussed in Chapter 3, these factors could raise barriers to entrepreneurship and FDI, and impair incentives to invest or innovate. The increasing extent of state control in commercial enterprises over the past decade may have restricted competition and reduced risk appetite among large firms. Lengthy and inefficient consent processes associated with the Resource Management Act (Chapter 4) may have also discouraged some take-up of potentially profitable opportunities.

Policies to promote more balanced growth

The government has expressed a medium-term objective of closing the 35% per capita income gap with Australia (The 2025 Taskforce, 2009). Productivity-enhancing investments will be essential for its achievement. Raising the level of domestic saving through efficiency-enhancing measures would help in two ways. One is that it can help to reduce interest rates and the cost of capital, enabling a higher level of investment and capital stock, which would boost long-term output. The second is that for a given level of investment, a higher proportion funded by domestic saving increases the share of income that accrues to New Zealanders relative to foreign investors and reduces external vulnerabilities. Moving towards a more sustainable external position will also involve rebalancing the economy by moving resources away from consumption and towards the tradeables sector, which generates a stream of market income that can be applied to paying back foreign debt, while allowing the exchange-rate channel to play a stronger role in the adjustment process (OECD, 2007a). Given that the long-term drivers of low saving and growth remain unclear, tighter fiscal and easier monetary stances will probably contribute most durably to this adjustment process, as discussed above. In addition, this section discusses various policy options that may help stimulate national saving and improve growth prospects.

Enhance the environment for saving

The capacity to allocate capital to more productive uses and diversify private saving away from property and land may be severely limited as long as capital markets remain

thin. The transformation of Australia's financial system since the 1990s has been attributed by some to financial deregulation, the privatisation of government-owned assets and the earlier introduction of compulsory retirement savings (Gizycki and Lowe, 2000). In New Zealand, government-controlled commercial assets collectively represent more than half the market capitalisation of companies listed on the NZX. This suggests that privatisation or even partial floats of SOEs could add significant depth to capital markets, in addition to benefiting overall productivity (Chapter 3). The government's recent signals that it will consider reducing its ownership in four major electricity SOEs is thus a positive step, and further advances in this direction would be beneficial.

Improve the long-term viability of NZ Superannuation

Improving the fiscal sustainability of NZ Superannuation may increase national savings in a number of ways. One is by raising the age of eligibility (currently 65), preferably through linking it to changes in life expectancy. This would diminish lifetime benefits paid to pensioners and increase the labour force participation rate among older age groups. Potential output would rise, as firms raise capital inputs to accommodate the larger labour force (Karam *et al*., 2010). Although shorter retirement periods may reduce the need for households to save, public savings could increase because of lower benefit payments and higher tax revenues from increased labour income and consumption. A second way is by reducing pension benefits, which are currently indexed to wages. Indexing them at least in part to prices could push up households' saving rates and accelerate the rate of capital accumulation (Karam *et al*., 2010).

Improve the effectiveness and efficiency of KiwiSaver

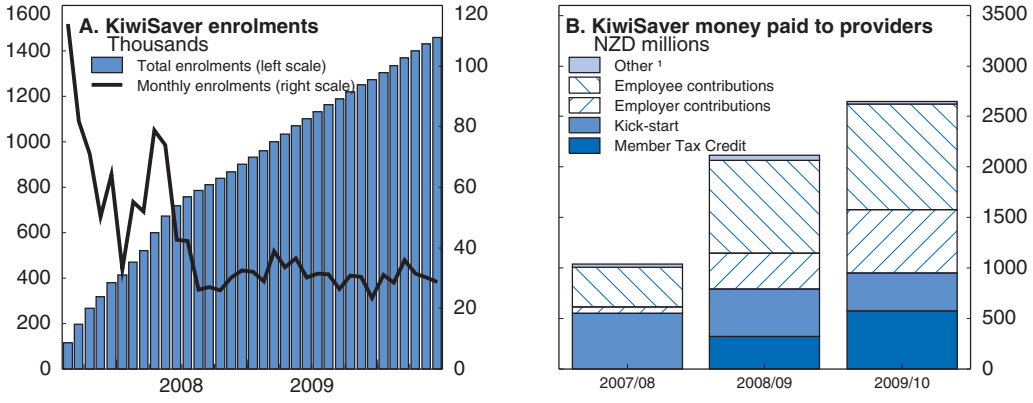
Introduced in July 2007 as part of a government strategy to improve private saving incentives, KiwiSaver is a voluntary tax-favoured defined-contribution retirement savings scheme. The savings are intended to complement the basic universal pension system (NZ Superannuation), which is non-contributory. All new employees are automatically enrolled, with contributions deducted from after-tax earnings at a default rate of 2% of gross salary and invested in financial assets. Members may also choose contributions rates of 4% or 8%, and reserve the right to opt out entirely during their first eight weeks of employment. These contributions are matched by the government up to NZD 1 042 per year (called "member tax credits"), and supplemented with compulsory employer contributions, which are tax-deductible and equal to 2% of the employee's gross wage. The government further provides a one-off tax-free subsidy of NZD 1 000 for all new members. Savings are generally locked in until age 65 when participants become eligible for NZ Superannuation. As a Portfolio Investment Entity, all returns earned within the scheme are taxed at a lower rate than equivalent income earned from labour.

The expansion of KiwiSaver may contribute to capital-market deepening over time to the extent that it raises the overall level of national savings. The effectiveness of tax-preferred savings accounts depends on the amount of new savings they generate. Studies assessing the impact of tax-preferred savings plans on overall national saving levels tend to find mixed results, suggesting the effect may be small, to the extent that they simply divert savings from other accounts or incur large public costs. However, several studies conclude that a higher participation of low- to moderate-income households is most likely to generate new saving (OECD, 2007b). This is because a larger share of such households would not save in the absence of tax incentives, whereas high earners would be more likely

to reshuffle saving from other sources. Furthermore medium-income individuals face lower tax rates, so their participation also implies a lower cost relative to that of wealthier individuals in terms of foregone tax revenue (OECD, 2007b). Finally, the cost of these accounts tends to be largest when incentives are granted through tax credits or generous saving bonuses, rather than through exemptions of accrued earnings (OECD, 2007b).

To date, KiwiSaver uptake has been high, with around 1.63 million members enrolled by early 2011, roughly 40% of the eligible population (Figure 1.11, Panel A). Government contributions accounted for 40% of accumulated KiwiSaver funds over the three years since inception (Figure 1.11, Panel B). Surveys conducted after KiwiSaver began reveal that from 38-50% of members were contributing new savings through reduced spending, rather than shifting it from existing sources (Gibson and Le, 2008; Colmar Brunton, 2010). Those contributing new saving had lower average income than those reported to be reshuffling, while non-members tended to have even lower incomes. However, overall new saving was estimated to be only 9 to 19% of contributions, reflecting the high share of government contributions and the relatively limited saving of lower-income members. These findings suggest that KiwiSaver could generate new saving more effectively by eliminating costly government subsidies to all members, and especially high earners who are least likely to increase their savings through KiwiSaver. Tax credits could be retained for low- to modest-income individuals to encourage their participation, but the matching rate should be carefully assessed with a view to generating the highest saving at lowest fiscal cost. While making enrolment compulsory could increase overall saving significantly, it may not be desirable from an overall welfare standpoint. In particular, compulsion may make some individuals worse off by confining them to a saving pattern that is sub-optimal for them. Participation could instead be broadened by extending automatic enrolments to all existing employees, rather than just new ones. The default contribution rate could also be increased, for example, to 4% (with the option to reduce it subsequently), as recommended by the government-appointed Savings Working Group (Savings Working Group, 2011).

Figure 1.11. **Effect of KiwiSaver**



1. Other is voluntary contributions, fee subsidies and interest.

Source: The Treasury (2010), *Savings in New Zealand – Issues and Options*, September.

StatLink http://dx.doi.org/10.1787/888932399525

Persistently large saving-investment imbalances may result in part from the taxation system. Although evidence that taxation affects aggregate saving is mixed, non-neutralities in the tax system can affect the composition of saving by distorting market

signals of the true comparative rates of return on different vehicles (van den Noord and Heady, 2001). There are also indications that high income tax rates may be associated with lower household saving rates (Tanzi and Zee, 1998). In New Zealand, the top personal income tax rate has exceeded the corporate and capital income tax rates since 2000, with evidence that substantial shifts in income have occurred from individuals facing the top rate into lower-taxed companies and trusts (TWG, 2010). Furthermore, the exclusion of imputed rents and capital gains from the tax system contributes to biasing household portfolios towards property assets (Chapter 2). The 2010-11 budget introduced some reforms to reduce or offset some of these distortions and stimulate savings and growth, including an increase in the VAT rate and reduction in income tax rates (Table 1.7). The corporate tax rate was also lowered from 30% to 28% effective April 2011. Even after recent budget changes, however, New Zealand's corporate tax rates remain above the OECD average, while the VAT remains at the low end of the range.

Table 1.7. **Summary of tax changes in the 2010-11 budget**

Percentages

	Before budget 2010-11	After budget 2010-11
Income tax bracket		
NZD 0-NZD 14 000	12.5	10.5
NZD 14 001-NZD 48 000	21	17.5
NZD 48 001-NZD 70 000	33	30
NZD 70 00+	38	33
VAT	12.5	15
Corporate tax	30	28
Gift tax	Gift duty of 5-25% of value imposed on donor	0
Savings		
Trusts	33	33
Portfolio Investment Entities	30	10.5, 17.5, 28
Unit trusts, Superannuation Funds	30	28

Source: Inland Revenue Department.

Tax reforms to stimulate growth and reduce savings distortions

Continuing progress towards a more growth-friendly tax mix would be beneficial, including either a realignment of corporate, capital and top marginal income tax rates towards lower levels, or a reduction in capital income tax rates. Resulting revenue losses could potentially be offset by higher consumption and environmental taxes (including eventual emissions permit auction receipts), and by introducing a capital gains tax combined with a higher property or land tax (Chapter 2) to help reduce distortions in saving and investment decisions. Introducing a capital gains tax would address a significant gap in the tax base and also improve equity, since capital assets tend to be owned disproportionately by higher-income households (NZ Treasury and IRD, 2009). However, if a capital gains tax is not implemented, some alternative options can be considered to reduce distortions in the tax system, discussed below.

Reduce taxation of alternative savings vehicles

In the absence of a capital gains tax, the bias towards property investment could alternatively be reduced by improving the tax incentives to invest in other savings vehicles. The extent to which households invest excessively in housing as a means of retirement

provision may reflect the way private pensions are taxed. The current taxation of savings is based on a taxed-taxed-exempt (TTE) system, which taxes income from labour and investment when earned, but not when investment assets are sold or drawn down. Most other countries operate at least partial exempt-exempt-taxed (EET) systems, which exempt labour income that is saved, as well as returns from investing that income, but taxes the income when it is withdrawn from the investment vehicle. This tends to favour long-term saving to the extent that it is mainly withdrawn during retirement when income levels and thus tax rates are lower. Since the TTE tax system effectively imposes a tax on the returns from saving, introducing EET savings vehicles would remove the relative advantages that exist for housing investment. The government has moved somewhat in this direction by taxing returns on certain types of saving at lower rates, namely capital income earned within PIEs such as KiwiSaver, unit trusts and superannuation funds. In the 2010-11 budget, the tax rate on returns within these vehicles was lowered relative to marginal tax rates for investors in most income brackets. However, some potential implications should be considered. Reducing the tax rate on saving may require raising taxes elsewhere to offset the revenue loss, which may have efficiency costs. Furthermore, while imposing caps on the amount that can be saved at the preferential tax rates may limit the increase in private saving, the fiscal cost needs to be minimised in order to improve national saving overall.

Inflation indexation of interest income

Interest-earning investments are currently taxed on nominal income and are thus penalised relative to other assets when the inflation rate is positive. This is because the inflation component of interest earnings is taxed, whereas an asset earning capital gains is not taxed, even if it merely appreciates at the rate of inflation. One way to reduce this asymmetry is to tax only the real portion of interest income (Coleman, 2009). In the case where house prices appreciate at the rate of inflation, a tax on real interest income would have the same impact as a capital gains tax on rental property investments (Coleman, 2009). Distortions could arise, however, to the extent that house price growth exceeds inflation.

Box 1.3. **Recommendations for macroeconomic policies**

Monetary and fiscal policies to bolster credibility

- Maintain current interest-rate settings until earthquake reconstruction gets more firmly underway, while looking through purely temporary disturbances to headline inflation. Consider accelerating the pace of tightening if regional or sectoral wage pressures threaten to spread more widely and pass through into inflation.
- Take potential build-up of asset bubbles into account in monetary policy formulation, as the Reserve Bank does implicitly. Continue to explore potential of "through–the-cycle" approaches to prudential regulation, consistent with Basel/G20 discussions. Consider applying maximum leverage ratios to mitigate vulnerabilities.
- Develop a credible medium-term fiscal programme, anchored on structural spending reforms, to return the fiscal position to a structural surplus by 2015 and to a strong surplus position a few years later. Reinstate contributions to the Super Fund at that point. Reducing state ownership of commercial assets and implementing the following structural spending reforms could help improve the fiscal position:
  - Continue with "value for money" health care reform, strengthening efficiency incentives on providers, and reinstating patient user charges.

Box 1.3. **Recommendations for macroeconomic policies** *(cont.)*

- Target welfare benefits on the needy and index pensions wholly or partly to the CPI (for instance, CPI + 1%). Apply stronger means testing to public transfers (*e.g.* Working for Families) to reduce particularly inefficient forms of public spending.
- Reduce KiwiSaver's fiscal cost by removing the subsidies provided to all members, possibly retaining the tax credits only for low- to moderate-income taxpayers.

- Adopt a fiscal spending rule to encompass all spending, discretionary and entitlement, current and capital, with the exception of cyclically sensitive spending (unemployment benefits), while maintaining the operating allowance as a tool for achieving (what amounts to) a net debt rule. Encourage local authorities to adopt comprehensive spending rules as well.
- Establish an arms-length and sufficiently influential fiscal authority to provide external oversight over the sustainability and policy soundness of budget proposals, impose reputational costs on any failure to follow budget rules and enhance public acceptance of spending restraint while maintaining fiscal surpluses.

Policies to address macroeconomic imbalances

- Relieve upward pressure on the exchange rate while improving short-term demand management by tightening the fiscal policy stance in turn enabling a looser monetary policy stance.
- Reduce biases in the tax system that distort saving and investment decisions by either realigning corporate, capital and top marginal tax rates, or reducing capital income tax rates. Introducing a comprehensive realisation-based capital gains tax would reduce the relatively favourable treatment of assets such as property and land. Given considerable design and practical issues that could arise, alternative options could include:
  - Reduce the asymmetry between the taxation of interest-bearing assets and others, by taxing only the real portion of interest income, adjusted for inflation.
  - Remove the tax disadvantage of other savings vehicles relative to housing by lowering taxes on capital income. Enhance incentives to boost household saving by moving to an exempt-exempt-taxed (EET) system, which would allow all earnings contributions and returns to be exempt from taxation until they are withdrawn.
- Extend automatic enrolments in KiwiSaver to all employees, rather than just new ones, and consider raising the default contribution rate to 4%.
- Increase the long-term viability of NZ Superannuation by linking the age of benefit entitlement to life expectancy or indexing benefits to increase more slowly than wages.

Notes

1. Significant one-off factors included earthquake reinsurance payments (see Box 1.1), registered as a current account transfer receipt, and settlement of a tax dispute by foreign-owned banks, lowering their profits.
2. Lamb production has plummeted because of a wet and cold 2010 winter, while dairy volumes will suffer because of moderate drought conditions in the spring and summer of 2010-11.
3. According to PriceWaterhouseCoopers reports, the weighted average cost of capital for NZ firms was 8.3, 9.4 and 8.8% at the end of 2008, 2009 and 2010, respectively.
4. The 2008-09 cycle accounts for 1 percentage point of this increase, *i.e.* one-sixth of the total increase (Mears *et al.*, 2010). By comparison, OECD estimates of the cyclically adjusted primary spending of the general government rose by some 3 percentage points of GDP between calendar years 2002 and 2009 (*OECD Economic Outlook 88*).

5. According to the (updated) OECD Jobs Strategy (OECD, 2005), generous in-work benefits have to be accompanied by narrow targeting in order to channel help to the neediest families and keep programme costs within reasonable limits, while also reducing deadweight losses arising from the fact that some beneficiaries would have found a job or increased their work effort even in the absence of the scheme. Targeting could be further enhanced by a time limit on the receipt of benefits. Administrative costs could be kept down by integrating in-work benefits into the tax system.
6. As argued by Labuschagne and Vowles (2010), the existence of a risk premium would tend to lower the exchange rate and private debt levels as the cost of borrowing increases, but this has not occurred. On the contrary, the exchange rate is estimated to be overvalued by 10-25% (IMF, 2010), consistent with carry trade activity. The observation that debt levels have actually trended upwards further supports the notion that low saving has been the cause of high interest rates.
7. Moreover, reinvested earnings of such firms, including much of the banking industry, which is Australian-owned, account for a substantial part of the historically large negative investment income balance (Edwards, 2006).
8. Tax incentives that led to increasing loss claims on rental property investments are recorded as negative savings in the unincorporated business sector.

Bibliography

Barnes, S., R. Bouis, P. Briard, S. Dougherty and M. Eris (2011), "The GDP Impact of Reform: A Simple Simulation Framework", *OECD Economics Department Working Papers,* No. 834, Paris.

Calmfors, L. (2010), "The Role of Independent Fiscal Policy Institutions", *Rapport till Finanspolitiska rådet*, 2010/9.

Charles River Associates (2003), "A Study of New Zealand's capital markets", submitted to: Knowledge Wave Trust, Ministry of Economic Development and Deloitte, Touche and Tohmatsu, Wellington.

Cheung, C., D. Furceri and E. Rusticelli (2010), "Structural and Cyclical Factors Behind Current-Account Balances", *OECD Economics Department Working Papers*, No. 775, Paris.

Chinn, M.D. and H. Ito (2008), "Global Current Account Imbalances: American Fiscal Policy *Versus* East Asian Savings", *Review of International Economics*, Vol. 16, pp. 479-498.

Coleman, A. (2009), "The Long-Term Effects of Capital Gains Taxes in New Zealand", *Motu Working Paper* 09-13.

Colmar Brunton (2010), "KiwiSaver Evaluation: Survey of Individuals", *Final Report Prepared for Inland Revenue*, 21 July.

Edwards, S. (2006), "External Imbalances in an Advanced, Commodity-Exporting Country: The Case of New Zealand", *NBER Working Paper*, No. 12620.

English, Hon. B. (2010), *Budget Policy Statement 2011*, 14 December.

Furceri, D. and A. Mourougane (2009), "The Effect of Financial Crises on Potential Output: New Empirical Evidence from OECD Countries", *OECD Economic Department Working Papers*, No. 699, Paris.

Gibson, J. and T. Le (2008), "How Much New Saving will Kiwi Saver Produce?", *University of Waikoto Department of Economics Working Paper*, No. 03/08.

Gizycki, M. and P. Lowe (2000), "The Australian Financial System in the 1990s", Reserve Bank of Australia, *www.rba.gov.au/publications/confs/2000/gizycki-lowe.pdf*.

Hagemann, R. (2010), "Improving Fiscal Performance Through Fiscal Councils", *OECD Economics Department Working Papers*, No. 829.

Hodgetts, B., P. Briggs and M. Smith (2006), "Household Saving and Wealth", paper prepared for Reserve Bank of New Zealand workshop entitled *Housing, Savings, and the Household Balance Sheet*, Wellington, 14 November.

IMF (2010), *New Zealand 2010 Article IV Consultation Staff Report*.

Irwin, T. and O. Parkyn (2009), "Improving the Management of the Crown's Exposure to Risk", *New Zealand Treasury Working Paper*, No. 09/06, December.

Karam, P., D. Muir, J. Pereira and A. Tuladhar (2010), "Macroeconomic Effects of Public Pension Reforms", *IMF Working Paper*, No. 10/297.

Key, Hon. J. (2011), "Our Economic Challenge", *State of the Nation Speech*, 26 January, *www.beehive.govt.nz/speech/our-economic-challenge*.

Labuschagne, N. and P. Vowles (2010), "Why are Real Interest Rates in New Zealand so High? Evidence and Drivers", *New Zealand Treasury Working Paper*, No. 10/09.

Le, T., J. Gibson and S. Stillman (2010), "Household Wealth and Saving in New Zealand: Evidence from the Longitudinal Survey of Family, Income and Employment", *Motu Working Paper*, No. 10-06.

Le, T. (2007), "Does New Zealand Have a Household Saving Crisis?", *NZIER Working Paper*, No. 2007/01.

Mears, T., G. Blick, T. Hampton and J. Janssen (2010), "Fiscal Institutions in New Zealand and the Question of a Spending Cap", *New Zealand Treasury Working Paper*, No. 10/07, November.

Morningstar (2011), *Global Investor Experience 2011*, *http://global.morningstar.com/GlobalInvestor Experience2011*.

Noord, P. (van den) and C. Heady (2001), "Surveillance of Tax Policies: A Synthesis of Findings in Economic Surveys", *OECD Economics Department Working Paper*, No. 303, Paris.

OECD (2005), *OECD Employment Outlook*, 2005, OECD Publishing, Paris.

OECD (2007a), *OECD Economic Surveys: New Zealand*, 2007, OECD Publishing, Paris.

OECD (2007b), "Encouraging Savings Through Tax-Preferred Accounts", *OECD Tax Policy Studies*, No. 15.

OECD (2009), *OECD Economic Surveys: New Zealand*, 2009, OECD Publishing, Paris.

OECD (2010), *OECD Economic Outlook*, No. 87, May, OECD Publishing, Paris.

RBNZ (2010a), "Submission to the Savings Working Group", Reserve Bank of New Zealand, November.

RBNZ (2010b), *Financial Stability Report*, May.

RBNZ (2011), *Monetary Policy Statement*, March.

Savings Working Group (2011), "Saving New Zealand: Reducing Vulnerabilities and Barriers to Growth and Prosperity", *Final Report to the Minister of Finance*, January.

Schule, W. (2010), "Fiscal Policy, Rebalancing, and Growth in New Zealand", *IMF Working Paper*, WP/10/128, May.

Scobie, G., T. Le and J. Gibson (2004), "Saving for Retirement : New Evidence for New Zealand", *New Zealand Treasury Working Paper*, No. 04/12.

Sun, Y. (2010), "Potential Growth of Australia and New Zealand in the Aftermath of the Global Crisis", *IMF Working Paper*, WP/10/127, May.

Tanzi, V. and H.H. Zee (1998), "Taxation and the Household Saving Rate: Evidence from OECD Countries", *IMF Working Paper* No. 98/36.

The 2025 Taskforce (2009), "Answering the $64,000 Question: Closing the income gap with Australia by 2025", *First Report of the 2025 Taskforce*, November.

Treasury (2009), *Challenges and Choices, New Zealand's Long-Term Fiscal Statement*, October.

TWG (2010), "A Tax System for New Zealand's Future", Report of the Victoria University of Wellington Tax Working Group, January

Welfare Working Group (2011), "Reducing Long-Term Benefit Dependency: Recommendations", February.

Zijll de Jong, M. (Van) and G.M. Scobie (2006), "Housing: An Analysis of Ownership and Investment Based on the Household Savings Survey", *New Zealand Treasury Working Paper*, No. 06/07.

ANNEX 1.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 2009)
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 Employment Relations Act 2000 was amended to extend trial period provisions (for up to 90 days) from firms with fewer than 20 employees to all firms on 1 April 2011. The Employment Relations (Film Production Work) Amendment Act 2010 was passed on 29 October 2010, so that workers involved in such work will be independent contractors, unless they and their employer agree otherwise in a written employment agreement.
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 Social Security (New Work Tests, Incentives, and Obligations) Amendment Act 2010 increases the amount beneficiaries can earn before abatement, while repeat applicants for one-off hardship assistance receive financial advice. Activation policies now require Unemployment Beneficiaries to reapply for their benefit after 12 months, and Sickness Beneficiaries' eligibility to be reviewed, with graduated sanctions applied when obligations are not met. Part-time work tests have been introduced for Domestic Purposes Beneficiaries with a youngest child over 6 and will be introduced from May 2011 for Sickness Beneficiaries who are able to work part time. The government has established the Welfare Working Group to consider how to reduce long-term benefit dependency. The Group published its recommendations, which the Government is now considering, in February 2011.
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.	National Standards have been developed and are currently being implemented in primary schools. From 2012, school-level National Standards will be reported annually. The government spent about NZD 220 million to strengthen teacher professional learning and development in 2009/10, with particular focus on schools with high proportions of students achieving below expectations as well as Māori, Pacifica and special-needs students.

Recommendations	Action taken since previous *Survey* (April 2009)
Reduce wasted expenditure in the tertiary sector by vigorously pruning low-priority and low-quality courses.	From 2012, up to 5% of government funding for tertiary education institutions will be performance linked. A performance element has been introduced to the student loans scheme, requiring students to pass at least 50% of courses to continue to access it. The Industry Training Fund has been reviewed to ensure funded programmes are of high quality. This year, under-used funding from industry training was reallocated to fund extra places in universities in 2011-12 where excess demand exists. The government stopped funding short regulatory-compliance courses and reduced fundingfor adult and community education with low literacy, numeracy or employment focus.
Increase the supply of teachers through merit-based pay and/or by differentiating pay to reflect shortages in certain subjects, such as science and Māori language.	In April 2010, a Workforce Advisory Group recommended increased flexibility to recognise and reward teaching excellence, and feedback has been sought from the sector. The current secondary teachers' collective agreement makes provision for additional pay to teachers in approved Māori immersion programmes, and a Teacher Voluntary Bonding Scheme provides additional payments to graduate teachers who choose to teach in specified high-needs schools and subjects.
PRODUCT MARKET COMPETITION	
Remove soft price caps in the electricity sector, encourage the creation of financial markets for hedging energy-price and locational-basis risks, and provide a clear and stable regulatory framework. Encourage greater use of metering and time-of-day electricity charges.	Soft price caps in the electricity sector are to be terminated upon completion of the sale of the government-owned reserve power plant, Whirinaki. The five largest power companies have jointly entered into an agreement with the Australian Securities Exchange to develop a liquid hedge market for trading electricity futures and options. The Electricity Authority is currently developing a mechanism to improve the management of locational-basis risk. The Electricity Authority is currently preparing advice on the inclusion of floors on spot electricity prices in the wholesale market during supply emergencies. Industry code guidelines for metering standards, including guidelines for advanced metering infrastructure, are being developed by the Electricity Authority.
INNOVATION AND BUSINESS CREATION	
Foster a closer integration of education, immigration and labour-market policies with innovation policies.	No action.
Tie public R&D funding to private-sector funding, and explore other ways to spur greater public-private interaction. Ensure business R&D incentives work in concert with different R&D support programmes.	The Crown Research Institute (CRI) reforms underway include aiming to improve links between CRIs and their stakeholders, and using key performance indicators to hold CRIs accountable for their level of stakeholder engagement. New business R&D schemes include grants of 20% of R&D expenditure and business vouchers redeemable at public research institutions for projects with 50% business co-funding. The National Network of Commercialisation Centres is being established to improve collaboration among those involved in commercialisation activities at public research organisations to create scale and enhance capability. The tertiary education institutions' Performance Based Research Fund (PBRF) was changed to remove disincentives for researchers who undertake more commercially focused activities.
Expand foreign-credentials recognition to a larger number of countries and facilitate residency acquisition for foreign students after graduation.	A new Silver Fern Visa' was introduced in April 2010, which allows skilled graduates of overseas universities to come to New Zealand and job search for up to nine months. If graduates obtain skilled employment' they are able to apply for residence as Skilled Migrants.
TAXATION	
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.	Budget 2010-11 removed depreciation loading and set depreciation rates for buildings at 0% following analysis indicating that most buildings do not depreciate. The corporate tax rate was reduced to 28%. The Tax Working Group considered imputation and concluded that it should be retained. The government has not given further consideration to this issue.

Recommendations	Action taken since previous *Survey* (April 2009)
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.	Proposed changes to the CFC regime have been implemented, and legislation for complementary reforms to non-portfolio foreign investment funds has been introduced. Differences in the tax treatment of offshore investments remain, as tax rates are lower for wealthy individuals investing through collective vehicles, but individuals investing directly can reduce the amount of income on which they are taxed in years when returns are low. Officials do not support extending such concessions to both types of investor.
Eliminate the double-taxation of trans-Tasman profits distributed to shareholders by continuing to work towards agreement with Australia on mutual recognition of imputation and franking credits for foreign investment.	A submission was made to the *Australia's Future Tax System* review on this. Mutual recognition continues to be on the Tax Policy Work Programme.
PUBLIC MANAGEMENT	
Increase incentives for public-sector managers to develop relevant information systems to enhance performance.	Incentives have been increased through greater transparency in performance reporting, including through reporting to Ministers and Parliament on the audit grades for service performance information and associated systems and controls and publishing independent performance improvement framework reviews of departments and Crown entities.
DEEPENING FINANCIAL MARKETS	
Ensure there is a streamlined regulatory framework that requires firms offering collective investment instruments to have appropriate governance structures with sufficiently stringent requirements for trustees to make sure that they are capable of discharging their duties.	There are currently two separate pieces of legislation before Parliament that will affect this area. The first establishes a licensing regime for trustees, and the second improves the governance structure of retail KiwiSaver schemes. Both of these pieces of legislation are expected to be enacted in the first half of 2011. A major governance review of all collective investment schemes is underway with legislation expected to go before Parliament in 2011.
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.	Legislation creating new powers to prescribe regular, transparent and comparable disclosure of collective investment scheme fees, returns, asset allocations and conflicts of interest is currently before Parliament and is expected to be enacted in early 2011.
OVERCOMING GEOGRAPHIC DISADVANTAGES	
Facilitate maritime trade by cutting the time taken and documents needed to clear customs. Implement a single electronic window for different permits and authorisations.	A Joint Border Management System is under development which will include an electronic Trade Single Window. The Trade Single Windowis expected to be fully operational in 2013.
Consider reducing local government ownership of port assets to bring more market discipline to the sector.	Central government has limited ability to directly influence the investment decisions of local government (due to local democracy considerations), but it is considering ways in which it can bring more transparency to port performance.
HEALTH CARE REFORM	
Give sufficient spending autonomy to DHBs, including responsibility for maternity and disability spending. Decentralise wage bargaining to allow the DHBs the flexibility to innovate.	Some disability funding has been devolved to DHBs, but maternity remains centrally purchased. Individual DHBs' autonomy has been reduced in some areas where a local focus has proven inadequate. More multi-DHB regional planning is being pursued to achieve clinical and financial sustainability. DHBs as employers have opted to pursue national wage agreements as a way to control costs and avoid relativity claims across divergent contracts.
Assure sufficient scale of PHOs to allow risk pooling and develop its insurance/single-purchaser function.	Mergers have reduced PHO numbers significantly but are driven by scale economies and policy signals to reduce fragmentation, rather than risk pooling as PHOs still play little role in fund-holding and purchasing of health services. There is potential to increase risk pooling under new multiparty contracting mechanisms being introduced.
Use economic criteria to examine opportunity costs of alternative allocations of the marginal health-care dollar.	Devolved population-based funding means this needs to occur at multiple levels (national budget allocations and new initiatives). Fiscal constraints have raised incentives and emphasis on prioritisation within DHBs. Also, the National Health Committee (NHC) role has been shifted to assess new technologies and improve cost-effectiveness

Recommendations	Action taken since previous *Survey* (April 2009)
Disseminate best practice information to clinicians, develop performance indicators, monitor DHB provider arm (public hospital) performance.	Availability and use of published DHB and PHO performance measures is increasing, and analysis of productivity is improving. Multiple projects are underway to spread productivity-improving practices. A new accountability framework monitors DHB performance against best practice indicators. There has been progress in the use of benchmarking and productivity analysis tools/processes that involve both managers and clinicians. These are showing results as DHBs move to meet their planned targets, and link them to savings plans.
Evaluate whether government ownership of public hospitals, or outsourcing hospital management to an independent agency might help resolve DHB conflicts of interest and stimulate cost consciousness, efficiency and competition in the hospital sector.	Cabinet has agreed to review the DHB model in 2012, after assessing the impact of recent reforms to central health bodies and planning/decision rights in the sector.
Develop accountable contractual relationships across levels via risk sharing/conditionality/simple rewards. Develop incentives in PHO budgets to promote multi-disciplinary community clinics to serve those with chronic conditions and special needs.	New multi-party contracting/alliance approaches to primary care are being developed with involvement of private practices, PHOs and DHBs. This includes developing new integrated family health centres and new funding approaches with more local budget holding and decision making. To date this includes only marginal primary care funding, with "first contact" subsidies to GPs unchanged.
Allow capitation payment to better "follow the patient", eliminating restrictions on access to such payments by individual physicians and practices.	No changes have been made or are currently planned for the main "first contact" component of primary care funding.
Consider a role for wider private health-insurance coverage, with appropriate regulation and/or taxation.	Options to expand the contribution of private health insurance to funding services for older New Zealanders are being explored.
Reduce the proportion of GP reimbursement paid by capitation while keeping a modest level of out-of-pocket fees. Set PHO patient fees in line with budget holding obligations, with full or partial reimbursement by the DHB contingent on patient outcomes.	No change to current policy settings is under consideration at present. Public primary care subsidies and regulated caps on private copayments have been (broadly) inflation adjusted.
Consider social premiums or private insurance obligations for richer citizens to recoup financial burden sharing lost by copayment reductions.	Not under active consideration.
Embed DRG payments within a hospital budget-holding approach following a points system. Publish comparisons of track records across individual hospitals. Determine doctors' salaries within the budget envelope set by output-based payment system.	Policy changes not currently under consideration. Ministry of Health is undertaking work on improved hospital payment/contracting systems including output-based funding models. Relevant issues will also be canvassed in the 2012 review of the DHB model.

Chapter 2

Policies to rebalance housing markets

A considerable housing boom has been a key feature of persistently large saving-investment imbalances in New Zealand over the past decade. Wealth is concentrated to a greater extent in property compared to most other OECD countries, leaving households and the banking system heavily exposed to a correction in land and housing markets. Supply rigidities and tax incentives that bias savings decisions towards property investment have amplified the increase in house prices, widening wealth inequalities in the form of larger homes for those who can afford them, but deteriorating affordability for the rest of the population. Substantial distortions via tax planning have been evident in rental property markets. Although the 2010-11 budget introduced measures to reduce some of these distortions, further reforms are needed to remove the significant tax bias favouring housing. The economic downturn has increased financial pressures on the social housing sector, with a shortage of public dwellings in areas of high demand. Regional supply constraints reflect inefficient land-use policies and long delays arising from an overly complex urban planning system. The adoption of spatial planning frameworks is a positive step forward, but they should include pricing mechanisms for land and road use that are aligned with broader policy objectives.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Similar to many other OECD countries, New Zealand experienced a sharp boom in housing markets during the past decade, with important implications for overall economic performance as well as for social outcomes. Swelling household mortgage and other debt has been funded largely from abroad, exacerbating saving-investment imbalances and increasing external vulnerabilities (see Chapter 1). Wealth gains have accrued in large part to high-income households, with affordability deteriorating significantly for the rest of the population. Although house prices have fallen since the global financial crisis, they remain at relatively high levels. These economic and social challenges remain daunting.

Imbalances in housing markets can distort incentives and lead to a misallocation of resources, with adverse efficiency effects and distributional consequences. While housing booms were widespread in the OECD area, domestic structural inefficiencies appear to have magnified the effect on New Zealand's property prices. These reflect a combination of tax incentives, regulatory constraints on supply and a lack of alternative viable investments for long-term wealth creation. This chapter examines the role of these various structural factors in inflating property prices and potential policy options to rebalance housing markets in the pursuit of more sustainable growth. Residential mobility has traditionally been relatively high in New Zealand (OECD, 2000b) and appears to be facilitated by relatively low transactions costs and weak rent controls, so these issues are not discussed in this chapter.

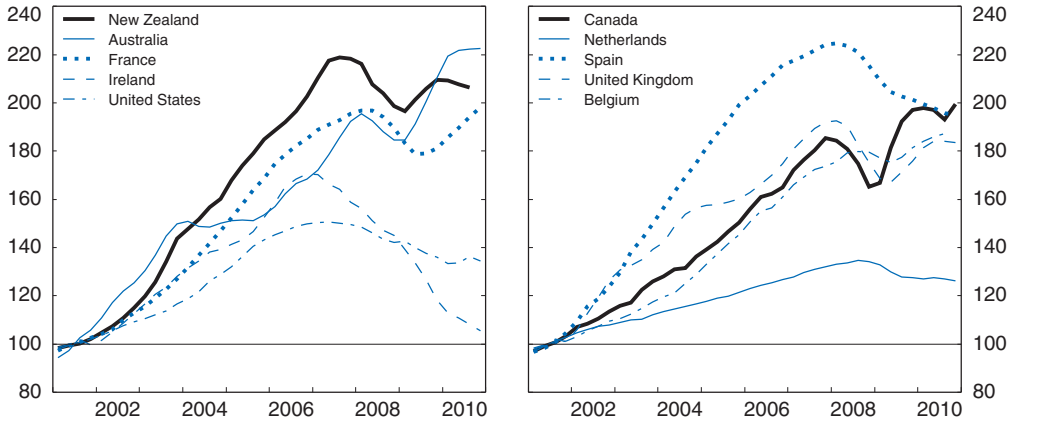
Features of the housing boom

Housing plays an important role in New Zealand's economy, with residential investment accounting for almost 7% of GDP at the peak of the boom, and real estate services constituting about 13% of the economy's total value added. Between 1990 and 2001, national average house prices had appreciated at an annual rate of only 2% in real terms and even fell in a number of districts. However, from around 2002 house prices increased in concert across all regions and local districts, and since then, cumulative growth in the national house price index has exceeded that of most other OECD countries (Figure 2.1). At their high point in 2007, NZ house prices had risen over 180% in real terms relative to 1990 levels, and all local districts experienced at least an 85% increase.[1] The strongest gains exceeded 200% in real terms and were concentrated in major urban centres and vacation spots located in accessible sunny or coastal regions. Roughly 86% of the population lives in an urban centre, and over one-third of New Zealanders live in Auckland.

This surge in real house prices appears to have been triggered by the combination of a sharp net inflow of migrants and easy credit conditions. External migratory flows can be large and volatile in New Zealand, placing significant pressures on housing demand. Net inflows in 2002 and 2003 combined to almost 2% of the entire population and have remained positive every year since (Figure 1.4, Panel A). With similar developments occurring in Australia, abundant immigration has fuelled faster population growth in the Australasian region than in most other advanced economies since 2001 (Tumbarello and Wang, 2010). Given the close ties between the two countries, a common Australasia-wide

Figure 2.1. **Housing price indexes across countries**

Index 2001 = 100



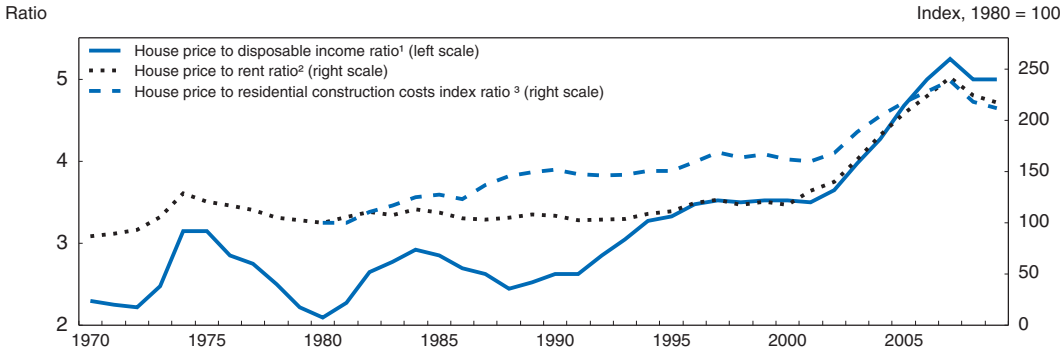
StatLink http://dx.doi.org/10.1787/888932399544

macroeconomic trend appears to explain over 90% of movements in NZ house prices, giving rise to what amounts to a single housing market across both countries (Grimes *et al.*, 2010). The surge in net migration occurred at a time when mortgage rates were at low levels compared to the late 1990s (Figure 1.4, Panel B). Together with low inflation, these developments significantly increased the amount that households could borrow without raising debt-servicing burdens, thus allowing them greater buying capacity in the housing market. Strong gains in the terms of trade during this period probably also played a role, as dairy price rises drove up rural land values, with spillovers into regional house prices (Chapter 1).

Lags in the response of residential construction to the positive demand shock prolonged the upward pressure on prices, with reports in early 2007 that the contracting industry was working at full capacity and that significant shortages existed in materials as well as skills in the engineering profession (Local Government Rates Inquiry Panel, 2007). The cost of building a home also ratcheted up by over 60% between 2002 and 2007 (Page, 2009). This largely reflected the surge in commodity prices and labour shortages, but also a decline in construction industry productivity, discussed in Box 2.3 below.

These factors likely inflated expectations of future house price appreciation, though it is difficult to determine whether a bubble had formed. Various affordability and relative price measures had reached levels that were well above long-term norms. In particular, house prices increased sharply relative to disposable income during this period. Rent increases remained relatively muted, growing roughly at the pace of overall CPI inflation. As a result, the price-to-rent ratio increased steeply from 2001 to 2007, after having remained flat since 1970 (Figure 2.2). This ratio can be interpreted as the cost of owning relative to renting a house. With the substantial increase since 2001, demand would be expected to eventually shift in favour of renting, reducing pressure on house prices. However, there may be several reasons why renting and owning are far from perfect substitutes, particularly if distortions exist in rental markets (Girouard *et al.*, 2006). In general, none of these ratios provide an accurate assessment of sustainability or affordability, since they are based on average measures, whereas housing markets tend to concern higher-income segments of the population. Furthermore, they do not account for changes in the user cost of housing. Although a number of econometric studies suggest that NZ housing prices were overvalued by up to 25% during the boom period (Fraser *et al.*

Figure 2.2. **Housing price ratios**



1. House price is the Quotable Value Ltd house price index.
2. Rent is the CPI Actual rentals for Housing.
3. The residential construction costs are estimated by the capital goods price index for dwellings and outbuildings.

Source: Statistics New Zealand; Reserve Bank of New Zealand; Girouard *et al.* (2006); OECD *Main Economic Indicators Database*; OECD calculations.

StatLink http://dx.doi.org/10.1787/888932399563

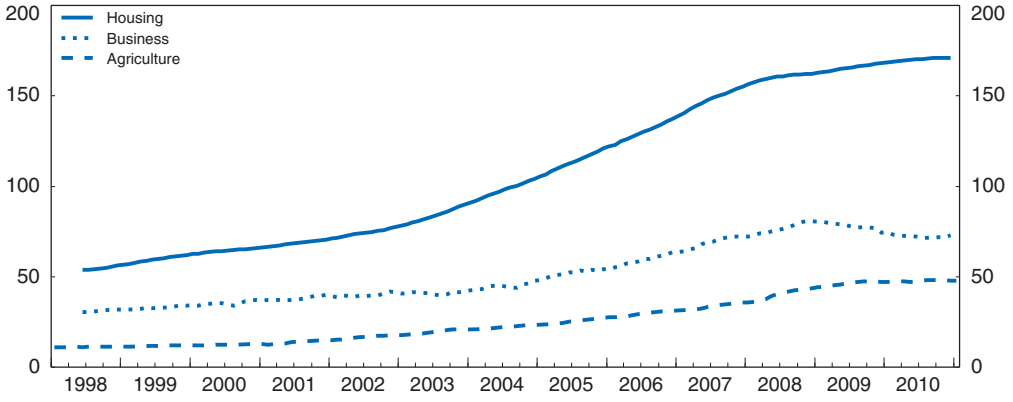
(2008); van den Noord (2006)), prices have fallen only slightly since the economic downturn. These prices reflect a thin market, however, as sales volumes have fallen steeply and remain 50% below peak levels.

Evidence that affordability has worsened for the average household may be better revealed by a growing "intermediate" market segment. This is identified by the number of households in the private rental market with at least one household member in paid employment, but who cannot afford to buy a house at the lower-quartile house price under standard bank lending terms. The latter is assumed to comprise a 10% deposit and no more than 30% of the household's gross income spent on mortgage payments at the one-year fixed mortgage rate. Census data indicate that the proportion of households renting in the private market who could not afford to buy a house more than doubled to 58% between 2001 and 2006 (DTZ, 2008).

The financial sector is heavily exposed to property markets, with residential mortgages accounting for over 50% of total bank and non-bank financial institution loans (Figure 2.3). However, it is likely that a sizeable portion (perhaps up to 20%) of residential mortgage loans reflects borrowing by households to finance their small businesses; unfortunately, data limitations prevent any accurate identification of these loans. The cooling in housing markets since 2007 has had only moderate repercussions for the wider financial system thus far, given the limited extent of mortgage securitisation or exposure to sub-prime mortgages, as well as banks' relatively conservative lending practices. Most banks require at least a 20% deposit to purchase a home and mortgage payments to not exceed 30% of household gross income. For loans greater than 80% of property value, premiums are charged for mortgage indemnity insurance, which insures the lender against any loss. The bankruptcy laws further discourage default by making borrowers liable for any remaining debt after their homes have been repossessed. Although the share of new mortgages with loan-to-value (LTV) ratios higher than 80% rose to above one quarter by early 2007, it is likely that these contracts largely reflected investment properties acquired by high-income homeowners who often use their primary residences as collateral.[2] Nonetheless, the subsequent economic downturn led to the failure of numerous non-bank finance companies, which had been an important source of financing for property development.

Figure 2.3. **Lending by financial institutions to housing, business and agriculture**

NZD billions



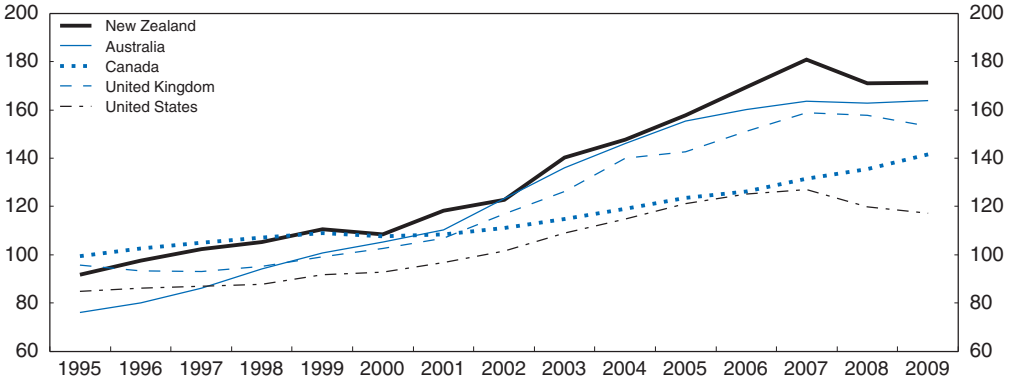
Source: Reserve Bank of New Zealand.

StatLink http://dx.doi.org/10.1787/888932399582

Household debt levels have accelerated since the early 2000s and remain close to 170% of disposable income, high by OECD standards (Figure 2.4). As interest rates began to pick up at the end of 2003, debt-service ratios also rose and crested at 15% of disposable income by the end of 2008.[3] However, analysis of data from the 2007 *Household Economic Survey* indicates that only 50% of homeowners have a mortgage, representing only 35% of all households (Kida, 2009). Most mortgage debt tends to be held by higher-income households, with those in the top two income quintiles accounting for almost three quarters (Kida, 2009). This analysis also shows that only 0.1% of indebted households in 2007 would be considered highly vulnerable, as defined by having LTV ratios above 80% or debt-service ratios above 55%. Declining house prices would most affect those with elevated LTV ratios, who tend to be high-income households (Figure 2.5, Panel A). Meanwhile, a shock to interest rates or income would create the most difficulties for those with hefty debt-service burdens, which are largely concentrated among low-income

Figure 2.4. **Household debt**[1]

As a percentage of gross disposable income

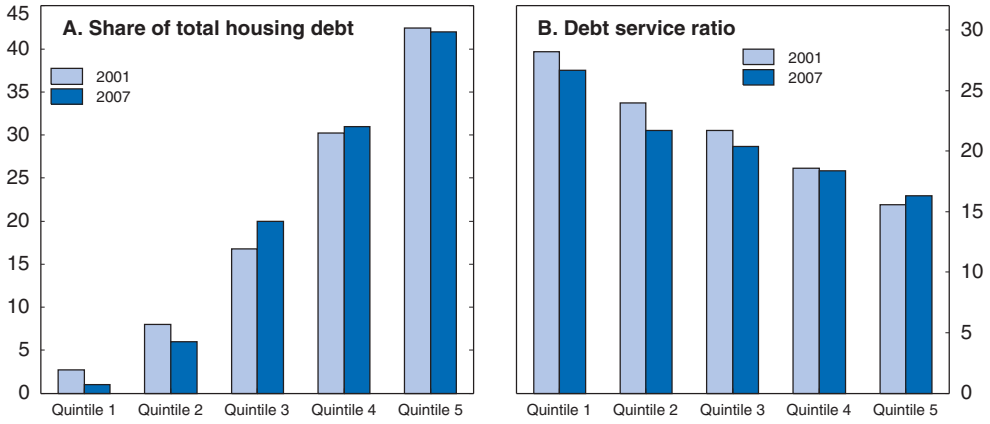


1. Short- and long-term loans.

Source: Statistics New Zealand and OECD *National Accounts Database*.

StatLink http://dx.doi.org/10.1787/888932399601

Figure 2.5. **Household indebtedness across income quintiles**



Source: Reserve Bank of New Zealand.

StatLink http://dx.doi.org/10.1787/888932399620

households (Figure 2.5, Panel B). As the share of loans on floating rates has increased since the economic downturn, reaching 50% towards the end of 2010, households may be more exposed to an eventual rise in interest rates. On the whole, mortgage delinquency rates have remained comfortably low at 1.3% in the first half of 2010, as compared to about 10% in the United States.

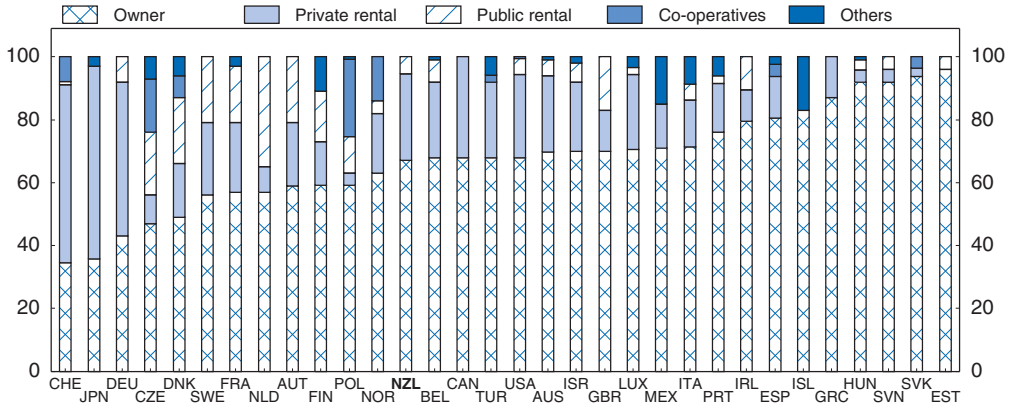
The nature of housing demand

Owner occupants

Despite the increase in housing demand since 2002, owner-occupancy rates declined over this period. The share of owner-occupied housing in New Zealand is slightly below the OECD average (Figure 2.6) and has been on the decline since peaking at 76.7% in 1986. This contrasts with the trend of increasing owner-occupancy rates observed in most other

Figure 2.6. **Tenure structure across countries**

Per cent of dwelling stock, 2009



Source: Andrews, D., A. Caldera Sanchez and Å. Johansson (2011), "Housing Markets and Structural Policies in OECD Countries", *OECD Economics Department Working Papers*, No. 836, OECD Publishing, Paris.

StatLink http://dx.doi.org/10.1787/888932399639

OECD countries. As of the 2006 census, 67% of New Zealand households were owner-occupiers, while 27.5% rented on the private market and 5.5% lived in social housing. Declining owner-occupancy rates reflect in part the trend towards postponing household formation until later in life, which has accompanied the increasing uptake of tertiary education and changing social dynamics. Reduced affordability has also played a role, as additional analysis suggests that between 1991 and 2006, the likelihood of owning diminished considerably faster for those on relatively low incomes than it did for the population as a whole (Morrison, 2008). These factors have lowered home-ownership rates among young households in many countries (Scanlon and Whitehead, 2004), but in some cases have been offset by the movement of large cohorts into older age groups with higher rates of ownership (Yates, 2000). In New Zealand, however, home ownership rates have fallen in all but the oldest age groups and across all income deciles (Morrison, 2008), suggesting the possibility of a structural shift in the housing market for which the exact reasons remain unclear.

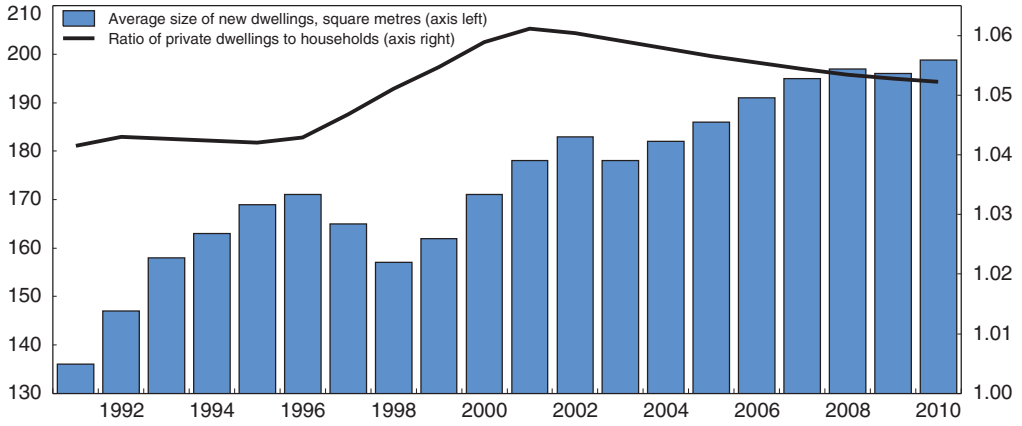
Specific events like partnering, break-ups, parenthood and employment changes tend to prompt tenure transition, with marriage and childbearing remaining the dominant drivers of the propensity to own (Morrison, 2008). In this regard, a decline in the proportion of couples with children from 34% of all households in the 1991 census to 27% in 2006 may explain some of the downward trend in home ownership. However, even for couples with children the probability of ownership declined by over 10 percentage points at the younger age groups between 1991 and 2006 (Morrison, 2008). Understanding the drivers of these trends is complicated by the endogeneity of household formation to the relative cost of housing. While house prices fluctuate with changes in demand, household formation decisions may in turn depend on the relative costs of renting or staying in the family home. For example, couples may decide to defer having children until they become owners, since accumulating sufficient funds for the deposit often requires both parents to work full time.

Although strong population growth and easy credit prompted the housing boom to get underway in 2002, the prolonged price increases that ensued do not appear to have been driven entirely by greater demand for housing services relative to other goods and services. For one, owner-occupancy rates continued to decline throughout the period (affordability issues aside) and rent prices increased in line with the CPI. Although the average size of new houses increased by about 10 square metres from 2002 to 2007 (Figure 2.7), the quality adjustment in house prices would normally remove this effect. With the strongest price increases observed in big cities and "sunshine" regions, these developments signal an increasing demand for holiday homes and rental properties in areas with capital gains potential. Additionally, housing construction failed to keep pace with the growth in household formation over this period, indicating an important role for tightening supply conditions (Figure 2.7). However, the total stock of private dwellings exceeded the number of households by about 5.2% in 2010, up one percentage point from the early-1990s, suggesting no overall lack of supply at the aggregate level (although it does not rule out regional shortages or unfulfilled size or tenure preferences).

Rental property investors

Although limited data make it difficult to distinguish the role of property investment in driving housing demand, various information sources suggest it was an important factor. Census data indicate that the share of housing stock owned by private-sector landlords increased from 15% in 1996 to 20% in 2006. Data from the *Household Economic Survey* and other sources suggest that by 2007 investment properties accounted for up to 40% of all residential

Figure 2.7. **Number and size of private dwellings**



Source: Statistics New Zealand.

StatLink http://dx.doi.org/10.1787/888932399658

mortgages (Brooks and Cubero, 2009). Estimates from the *Survey of Families, Income and Expenditure* (SoFIE) conducted in 2003-04 suggest that about 15% of households owned an investment property (Scobie *et al.*, 2007), of which roughly half were rental properties and the remainder holiday homes, timeshares and overseas property. About two-thirds of rental properties are standalone houses, rather than multi-unit dwellings.

The rental property market is characterised by numerous small proprietors rather than institutional investors (DTZ, 2004). Information from the annual ANZ Property Investment Survey, completed by about 1 000 investors nationwide, indicates that the majority (about 60%) are small-scale "mom and pop" entities, with less than 10% engaging as full-time property investors. Over 80% of those who invest in residential properties own more than one property, with the median at three, and intend to hold them for the longer term. Three-quarters of property investors are in the top half of the income distribution, with an average before-tax income of NZD 80 000-90 000 per year.

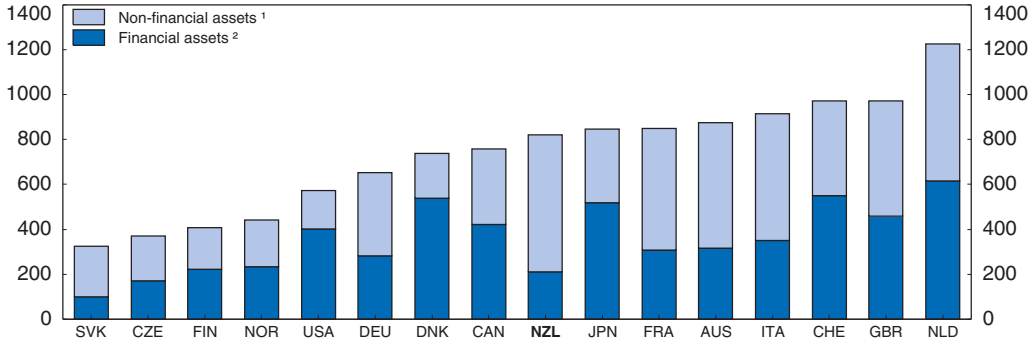
The majority of investors buy rental properties close to where they live, and so the regional pattern of demand appears to follow the population distribution fairly closely, with the bulk in the major urban centres of Auckland, Wellington and Christchurch. However, popular vacation destinations tend to be regions for which the share of rental property demand exceeds their population share. Based on the 2003 *National Landlord Survey* from the Centre for Research, Evaluation and Social Assessment, the most popular reasons cited for owning rental property are prospective capital gains (38%), regular income stream (32%) and retirement income (25%).

Are households' portfolios too concentrated in housing?

Although it is unclear to what extent NZ households under-save relative to others, a disproportionately large amount of household savings appears to be held in the form of housing, land or other durables compared to other OECD countries (Figure 2.8). As of 2008, non-financial assets accounted for over 75% of total NZ household assets, *versus* an unweighted average of 50% for 14 other OECD countries for which comparable data are available. The swelling in NZ property and land values relative to income levels since the early 2000s appears to account for about 10 percentage points of this gap. However, these

Figure 2.8. **Financial and non-financial assets as a percentage of net disposable income**

2009 or latest available year



1. Include dwellings, land and consumer durables. Dwellings only for Denmark, Finland, Norway and Slovakia.
2. Balance sheet consolidated for Australia, balance sheet non-consolidated for the other countries and Reserve Bank of New Zealand data for New Zealand.

Source: Reserve Bank of New Zealand; OECD *National Accounts Database* and *OECD Economic Outlook 88 Database*.

StatLink http://dx.doi.org/10.1787/888932399677

data exclude household investments in overseas assets, unincorporated businesses and unlisted incorporated businesses, which may be more important in New Zealand than elsewhere, given its relatively under-developed domestic financial markets and large farming sector. Furthermore, the aggregate data conceal a highly skewed distribution, with Le *et al.* (2010) finding that financial and other non-housing assets are relatively important components of net worth only for individuals in the top two deciles of the wealth distribution. New Zealand's higher concentration of wealth held in the form of housing may reflect in part tax incentives to own housing or supply restrictions that have inflated the price of property, discussed in the next two sections. However, it is likely that other factors play a role, given that many countries also provide generous tax treatment for housing, and face similar or even more onerous supply constraints (Caldera Sánchez and Johansson, 2011). The rest of this section discusses other possible reasons why NZ households may favour housing in their portfolio allocation, and the potential benefits and risks associated with that choice.

Purchasing a house is both a consumption decision and an investment decision. As an investment, housing differs fundamentally from other household assets in that it provides not only an important flow of services, but also a significant value in excess of that service flow during the lifetime of the owners (Sun *et al.*, 2007). Also, without home ownership, rent would absorb a significant proportion of household expenditure, so this additional value provided by home ownership insures the owner against fluctuations in the cost of such housing services (Sun *et al.*, 2007).[4] Over the long term, home ownership can ensure a sufficient level of residential comfort in retirement when income is typically low (van Suntum, 2009). Purchasing property may also facilitate long-term consumption smoothing over the life cycle via compulsion: through the obligation of mortgage payments, many households increase their home equity and save more than they otherwise would.[5]

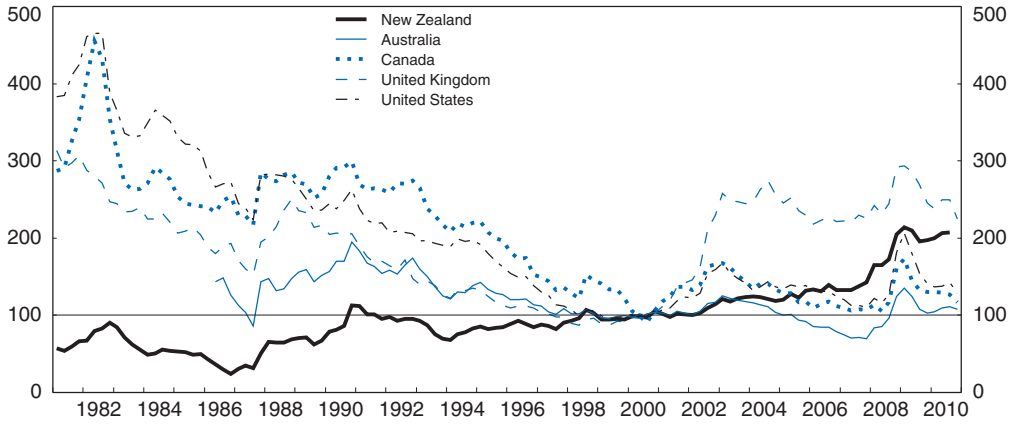
As discussed earlier, the growth in NZ real estate demand in recent years appears to reflect the increasing role of housing for investment purposes. This desire to accumulate housing assets may reflect widespread expectations that home ownership produces superior and more stable returns relative to alternative investments for long-term wealth

creation. Many households view ownership as an eventual source of retirement income that can be tapped via capital gains from the sale of investment properties, down-sizing or reverse mortgages. The reverse mortgage market has grown significantly in countries like the United States, the United Kingdom, Canada, Australia, the Netherlands, Spain and Sweden, although overall equity release still constitutes a very small proportion of total housing-related financial products (DEMHOW, 2010). In New Zealand, the use of reverse mortgages among older households is a fairly recent phenomenon, with outstanding loans worth NZD 447 million (roughly 6 500 contracts) as of December 2009, or roughly 0.2% of total household financial liabilities (Deloitte, 2010).

The evidence that home ownership is a superior vehicle for long-term wealth creation is mixed. Sun *et al.* (2007) find that a retirement strategy that includes the funds from a reverse mortgage among the assets to decumulate can generate superior average returns to one that depends predominantly on drawing down financial wealth. The strategy can be risky, however, particularly if the household lives longer than expected or unanticipated events require the house to be sold after equity has been significantly reduced. An examination of prices in housing relative to equities across countries over the past three decades shows no tendency for property to systematically outperform stocks over the long term (Figure 2.9). In New Zealand's case, however, homeowners on average would appear to have enjoyed superior returns to their shareholding counterparts over the late 1980s and for virtually the whole of the 2000s. Studies show, however, that housing prices have a large idiosyncratic component, and the returns to investing in a particular house are considerably riskier than suggested by analysis of national or regional house price indexes (Case and Shiller, 1989). While shares may also be risky, they can be transacted in smaller sums and complemented with a wide range of instruments, thus allowing greater possibilities for asset diversification.

Figure 2.9. **House prices relative to share prices**

Index 2000 = 100



Source: Thomson Datastream and OECD, *Main Economic Indicators Database*.

StatLink http://dx.doi.org/10.1787/888932399696

The extent to which NZ households' investment portfolios are concentrated in housing assets is disquieting, given the lack of certainty over the returns to housing over the long term. For example, demographic factors may affect returns if selling pressure from a rising share of retirees squeezes capital gains (Bollard *et al.*, 2006). Improving portfolio

diversification will remain a challenge in New Zealand, however, as long as shallow capital markets limit the availability of viable alternative investments (Chapter 1). In turn, financial deepening is restrained by the low level of household savings outside of housing and the relatively large share of banking-sector assets tied up in residential mortgage loans (Figure 2.5). Household confidence in financial markets has been low since the crisis that followed financial market reforms in the late 1980s, followed later by the recurrent failure of major finance companies in 2006 and again more recently. Furthermore for owner occupiers, favourable tax treatment (discussed in more detail below) makes paying off the mortgage the optimal saving strategy, rather than diversifying the portfolio of assets (OECD, 2000a). The development of KiwiSaver (see Chapter 1), however, could help divert savings towards alternative investments, eventually contributing to deepening financial markets over time.

The role of favourable tax policies

Reviews of tax systems across countries find that most OECD countries treat owner-occupied housing favourably relative to other forms of investment (Andrews *et al.*, 2011; Scanlon and Whitehead, 2004) and often encourage households to use their homes for long-term private wealth accumulation and even retirement income (van den Noord and Heady, 2001). These advantages are generally provided through non-taxation of imputed rental income and capital gains, low property taxes and mortgage–interest deductibility. Most OECD countries effectively exempt primary residences from capital gains taxation, but most do at least apply an inheritance tax, and almost three quarters tax capital gains on secondary residences (Annex 2.A1). By contrast, most OECD countries treat rental properties as an investment good, taxing capital gains and rental income, while allowing deductions for mortgage interest and other expenses. To achieve complete neutrality, owner-occupied housing would be treated as any other investment for tax purposes in the sense that rental income would be imputed for tax purposes and capital gains would be taxable, with mortgage interest payments fully tax-deductible.

Policies that favour housing may be motivated by the view that home ownership is a social good that assists family stability and the continuity of educational opportunities for children. Studies show that owner-occupancy tends to generate positive externalities such as safer and more stable neighbourhoods and improved educational outcomes for children (DiPasquale and Glaeser, 1999; Green and White, 1997; Coulson, 2002). These findings, however, tend to suffer from identification problems associated with endogeneity. In practice, there are strong indications that such tax policies tend to become capitalised into higher house prices and lead those who can afford it to buy more or larger homes than otherwise (van den Noord and Heady, 2001; Hargreaves, 2008; Andrews *et al.*, 2011). Greater wealth inequality and reduced labour mobility associated with rising home ownership may be other potential consequences. Policymakers should thus more carefully weigh these possible adverse effects against any social benefits of such policies. Another rationale for policies that subsidise housing may be to promote private retirement savings as ageing populations increase pressures on public pension systems. However, adopting such policies as a substitute to pursuing public pension sustainability magnifies the long-term risks for those unable to afford ownership, thereby exacerbating inequalities (Doling and Ronald, 2010).

Tax distortions have been significant

The tax system in New Zealand (see Table 2.1 for details) exempts imputed rent and capital gains from taxation, which creates advantages for owner-occupied housing in a

Table 2.1. **Taxation of housing in New Zealand**

Form of taxation	Owner occupier	Rental property investor
Tax on rental income or imputed rent	No	Taxed at marginal tax rate
Capital gains tax	No	No
Mortgage interest tax deductibility	No	Deductible at marginal tax rate
Property/Land tax	Yes	Yes, deductible at marginal tax rate
Inheritance/Estate tax	No	No
Transfer taxes or stamp duties	No	No
GST	No GST on imputed rent. GST is imposed on the cost of building new houses.	No GST on rent. GST is imposed on the cost of building new houses.

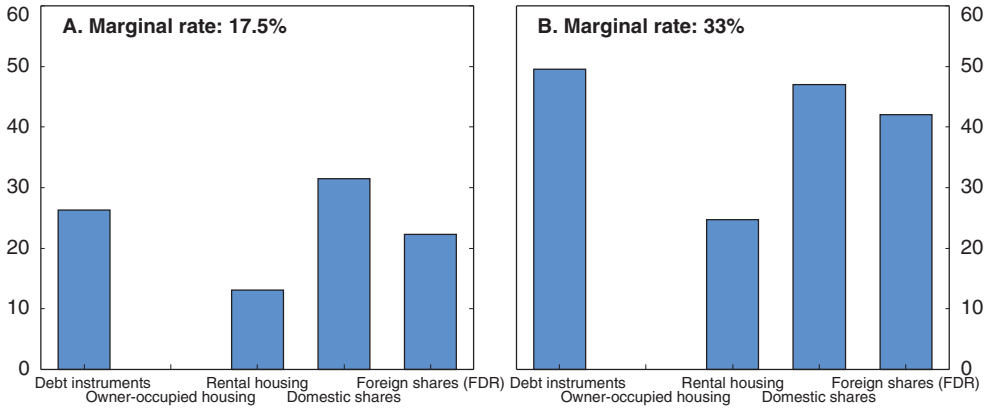
Source: Inland Revenue Department.

similar way to other OECD countries, except that mortgage interest is not deductible. For residential property investors, the tax treatment of income and expenses is similar to other investments in the sense that rental income is taxed as ordinary income at the marginal tax rate, while all related expenses incurred including mortgage interest can be deducted. However, property investors in New Zealand enjoy generous tax treatment because of the lack of capital gains tax and the extent to which losses can be offset against other income.

New Zealand is one of the few OECD countries with no comprehensive capital gains tax on any asset class (Annex 2.A1).[6] Because the nominal returns on interest-bearing assets are taxed, when the inflation rate is positive the absence of a capital gains tax creates incentives to invest in assets that earn nominal capital gains (*i.e.* property and shares), rather than interest. Although share investments for the most part also earn tax-free capital gains, dividend payments are often subject to taxation under a full imputation system that results in a net top tax rate of 11.4% (Chen and Mintz, 2009). This tax treatment encourages both rental property investment and purchase of owner-occupied housing. Property investments also become more attractive because the collateral value enables the individual to incur significantly higher leverage compared to other assets, which magnifies the potential for returns. The tax advantages to investing in housing relative to other financial assets increase with income levels and are illustrated in Figure 2.10. This stylised scenario indicates that for a given rate of return, an investor in the top marginal tax bracket could face discounts in the real effective tax rate (as a percentage of real income) of as much as 50% on owner-occupied housing and 25% on rental property, compared to debt instruments.

Rental property investors have benefited from several other tax provisions. One is that any losses on their investments can be deducted against labour income at the marginal income tax rate in order to reduce tax liabilities, while still being able to reap tax-free capital gains. This "negative gearing" has been widely advertised as a benefit to investing in housing and has led to an expansion in the use of Loss Attributing Qualifying Companies (LAQCs) for property investments. Until the 2010-11 budget changes (described below), these were companies with special tax status enabling their shareholders to claim losses against their personal income at their marginal tax rate. For high-income investors facing the top marginal tax rate, setting up LAQCs for their rental properties enabled arbitrage opportunities since the company profits could be taxed at the lower corporate tax rate. These opportunities increased when the top marginal tax rate was raised from 33% to 39% in 2000, while the corporate tax rate remained at 33%. Indeed, net rental income has declined markedly since 2000, with increasing losses claimed by LAQCs. Between 2003

Figure 2.10. **Real effective tax rates on different investment vehicles**[1]



1. These calculations assume a 6% rate of return on all assets. For shares, it is assumed that 66.6% of the return was paid in dividends, 33.3% was retained. For rental housing 50% of the return is assumed to be in the form of rental income and 50% in the form of capital gains.

Source: The Treasury (2010), *Savings in New Zealand*, Issues and Options, September.

StatLink http://dx.doi.org/10.1787/888932399715

and 2007 the number of active LAQCs doubled, and the average tax loss claimed by investors increased by almost 50% (TWG, 2010). Survey data further suggest that since 2006 roughly half of all property investors have reported losses on their investment properties, and a similar share have structured them as LAQCs (ANZ, 2007, 2008 and 2009).

On net, losses on rental property investments amounted to about NZD 0.5 billion in 2008, implying about NZD 150 million in tax revenue losses (or 0.2% of total revenues). Furthermore, the deduction of losses on rental properties from personal income allowed an estimated 9 700 additional families to gain eligibility for receiving tax credits from Working for Families, a programme providing assistance to low-income families (TWG, 2010). Until the most recent budget reforms, depreciation on rental properties was also tax-deductible until 13.5% of the original value was reached. Without a capital gains tax, this provision created asymmetries by allowing accruals-based depreciation on investment property without any equivalent tax on appreciation, although investors were required to pay back any tax benefit from depreciation deductions upon sale in the event that the property value had actually appreciated on net. These allowances were found to be relatively generous by international norms (Chen and Mintz, 2009) and may have offered a tax shelter for income from other sources.[7]

The result of these different tax provisions is that buying a home with mortgage debt is more advantageous for the rental property investor than the owner-occupier, because of the wide ranging opportunities to deduct losses. Moreover, high-income investors accrue larger benefits than low-income investors, since expenses and losses are deducted at the marginal tax rate. These tax incentives generate added demand for rental property investments, which may influence tenure decisions and have important implications for owner-occupancy rates, for example, by making it advantageous for individuals to purchase a rental property to lease out, while continuing to live in rented accommodation themselves. Once the mortgage is paid off, however, the tax advantage then shifts in favour of owner-occupiers who enjoy tax-free imputed rental income. The potential effect of these various tax advantages on housing values is illustrated in Box 2.1.

Box 2.1. **The effect of New Zealand's tax system on housing values**

The impact of housing taxation on property values can be approximated using a discounted cash-flow model based on the user cost of housing, as applied by Hargreaves (2008), Girouard *et al.* (2006) and Poterba (1992). In this model, the equilibrium value of a house is that which equates the after-tax returns to the corresponding cost of holding the property. As a baseline scenario with no distortions, housing is taxed in the same way as other investments, with taxation of rental income and capital gains at the same rate, and tax deductibility for mortgage interest and other user costs of housing. Assuming the property is purchased with a mortgage loan worth 80% of the value (V), the equilibrium condition can be represented as:

$$A(1 - t^i) + Vg(1 - t^c) = (0.8Vi + Vf)(1 - t^i) + 0.2Vr(1 - t^c),$$

where A is the annual rent, t^i is the marginal income tax rate, g is the expected capital gain, t^c is the capital income tax rate, i is mortgage interest rate, f is the user cost of ownership as a percentage of the property value (including local property tax), and r is the rate of return on a bank deposit or alternative investment. The final term on the right-hand side of the equation thus represents the opportunity cost of depositing the 20% down-payment in a bank account.

The impact of New Zealand's housing taxation on this value can be illustrated with a numerical example. Assuming the property buyer faces annual rental income (A) of NZD 5 840, a top marginal income tax rate (t^i) and capital income tax rate (t^c) both equal to 33%, a mortgage rate (i) of 8%, ownership costs (f) of 2% of the property value, a bank deposit rate (r) of 7.2%, and expected capital gains of 4%, the undistorted equilibrium purchase price of the property under a perfectly neutral tax system is then:

Undistorted value:

$$V = \frac{A(1 - t^i)}{(0.8i + f(1 - t^i) + (0.2r - g)(1 - t^c)} = \text{NZD } 100\,000$$

In New Zealand, rental property investors are not taxed on capital gains. For investors purchasing with an 80% mortgage, this distortion inflates the property valuation by over 50% relative to the undistorted value:

Mortgaged rental property investor value:

$$V = \frac{A(1 - t^i)}{(0.8i + f(1 - t^i) + 0.2r(1 - t^c) - g} = \text{NZD } 150\,901$$

Meanwhile, owner-occupiers cannot deduct mortgage interest payments but face no tax on imputed rents or capital gains. These provisions push up the property valuation by 9% for a mortgaged buyer, and by over 100% for the unmortgaged owner-occupier:

Mortgaged owner-occupier value:

$$V = \frac{A}{0.8i + f + 0.2r(1 - t^c) - g} = \text{NZD } 108\,858$$

Unmortgaged owner-occupier value:

$$V = \frac{A}{r(1 - t^c) + f - g} = \text{NZD } 206\,799$$

This simplified scenario indicates that purchasing a property with a mortgage is most advantageous for rental property investors, whereas unmortgaged owner-occupiers eventually enjoy the largest benefits from the tax system. Owner-occupiers therefore have the incentive to pay down their debt as quickly as possible. These tax benefits are highest for buyers in the top marginal tax bracket and increase substantially with the amount of capital gains.

Overall, the tax incentives to own property may have led to a larger concentration of household portfolios in property and less in financial instruments than would otherwise be the case, distorting the allocation of economic resources. In New Zealand, the average size of new houses has increased from 136 square metres in 1991 to 197 square metres in 2009, despite the shrinking size of households from an average of 2.8 people to 2.6 over this same period (Figure 2.7). Tax benefits also increase with income and are thus regressive. House price increases redistribute income from new entrants in the housing markets to existing homeowners (Andrews *et al.*, 2011) and lead to a growing market segment that cannot afford to buy a home. Indeed, widening inequalities in the distribution of net worth have been observed across New Zealand households. Estimates by Le *et al.* (2010) based on data from the 2007 *Survey of Family, Income and Employment* (SoFIE)[8] suggest that the wealthiest 20% of the population owns 70% of the total net worth (of which property is the most important component), while the poorest 30% have almost no net wealth. Based on assets net of liabilities, Le *et al.* (2010) find that New Zealand's Gini coefficient for net worth was closer to 0.7 in 2006, significantly higher than the official income-based measure of 0.34. To help address rising affordability problems the government has introduced several programmes to assist low- to moderate-income households to access home ownership (Box 2.2).

The government has been trying to reduce these distortions

The government fully recognises the distortions arising from New Zealand's tax treatment of housing, and the 2010-11 budget included several measures to reduce them. One was the removal of the ability to deduct property investment losses from taxable income in the calculation of Working for Families tax credits. Regulations on LAQCs were also tightened, so as to no longer permit the attribution of losses to shareholders, with the option to convert LAQCs to "look-through companies" in which the personal income tax rate applies to both profits and loss deductions. The budget further eliminated the ability to claim depreciation allowances on most residential and commercial properties.[9]

The 2010-11 budget also reduced the top income tax rate from 38% to 33%, which lowered the incentives for high-income earners to claim rebates for losses on investment properties. This change also lowers the tax on interest income, making interest-bearing assets more attractive relative to housing. Another reform was the reduction in the top tax rate for most portfolio investment entities (PIEs) from 30% to 28%, which increases the attractiveness of these savings vehicles relative to housing. Finally, funding was increased for Inland Revenue to enforce tax compliance, particularly on property investments believed to be used for tax avoidance. Together, these tax changes should raise the cost of rental property investments somewhat relative to alternatives, while possibly driving rent levels higher.

Yet further measures are needed

Although these reforms are welcome, some tax bias favouring housing remains because of the absence of taxes on capital gains and imputed rent. In the 2010 ANZ Property Investment Survey (ANZ, 2010), 70% of property investors reported that the 2010-11 budget did not change their investment strategies. While many other countries also exempt owner-occupied housing from taxes on capital gains or imputed rent, they often offset the bias by granting tax advantages to other savings vehicles (in particular private pensions). New Zealand's experience suggests that policies that divert private savings towards housing at the expense of other assets contribute to raising the cost of capital and limiting

Box 2.2. **Government assistance with home ownership**

The government provides various programmes to assist low- and moderate-income households to purchase their first home.

Welcome Home Loan: an initiative introduced in 2003 to make access to home ownership finance easier for modest-income New Zealanders. Loans of up to NZD 350 000 are provided by participating institutions to those who can afford mortgage repayments but not a large deposit for a first home. Participating lenders determine the criteria and terms of the loans, while Housing New Zealand Corporation (HNZC) provides them with insurance against loan loss. Eligibility is limited to those with an annual before-tax income of no more than NZD 85 000 (or NZD 120 000 for three-or-more-person households) with a good credit rating and who plan to live in the dwelling. Since 2003, almost 6 000 households have benefited from Welcome Home Loans.

KiwiSaver: administered by HNZC, began in July 2007 (Chapter 1). Assists first-time home ownership for those who have been members longer than three years and plan to live in the residence through two channels:

- allowing withdrawals of all personal and employer contributions and all returns to purchase a first home;
- providing a first-home down payment subsidy of NZD 3 000-NZD 5 000 for those with combined before-tax income less than NZD 100 000 (for one- to two-person households).

Gateway Housing: makes Crown land available to first-time buyers with payment for the land deferred and capped for 10 years. Gateway Housing opportunities are available primarily through partnerships with community housing organisations and HNZC.

Kainga Whenua: introduced in February 2010, enables those with a license to occupy Māori land to obtain a loan of up to NZD 200 000 to build, purchase or relocate a house there. Eligibility is based on the same income criteria as for Welcome Home Loans.

Housing Innovation Fund: provides community housing providers and Iwi/Māori organisations with funding to build or buy community rental housing and to provide for affordable home-ownership opportunities through either a term loan or a grant.

the depth of its financial markets (CMD Task Force, 2009). An under-developed financial system in turn reduces the ability of the economy to allocate capital towards its most productive uses, hindering business investment and productivity. These consequences suggest that eliminating the bias towards housing relative to alternative savings vehicles could enhance the productive capacity of the economy at large. The availability of KiwiSaver since mid-2007 should help NZ households diversify their savings, and, given its tax-favoured status, should have made non-housing investments relatively more attractive. However, the explicit home ownership subsidy (Box 2.2) it provides to members undermines the asset diversification process.

The persistent imbalances in residential property markets suggest a need to remove the incentives inherent in the tax system that divert household savings towards housing. Removing the distortion between housing and other investments would ideally involve taxing housing income in the same way as other capital income and thus introducing a comprehensive tax on capital gains and imputed rents. This section discusses the practical issues surrounding the implementation of these taxes and the potential alternatives to address these difficulties.

A tax on capital gains

While the absence of a capital gains tax favours both property and shares, it has probably generated a greater bias towards housing and farm assets because of external factors that make equity investments less attractive in New Zealand. These factors include the country's lack of deep stock markets and the greater ability to leverage on property investments, neither of which would be addressed by a capital gains tax. Nonetheless, taxing capital gains on an accruals basis would broaden the tax base and reduce distortions in investment decisions. However, several practical and political challenges have prevented the government from proceeding in this direction. One is the equity and fairness issues arising from its effect on asset-rich but cash-poor households. Such a tax could create liquidity problems for households living in areas where property values have appreciated dramatically, but with insufficient cash-flow to cover the tax burden (OECD, 2006). Additionally, the tax could be perceived as unfairly treating retired households who do not plan to move and would thus receive no benefit from the appreciation of their properties. As a result, most countries that tax capital gains do so on a realisation basis, with the taxation deferred until the year of asset disposition or the death of the owner. Another key hurdle to introducing a capital gains tax is that it could result in an immediate decline in land or property values by the amount of the rise in the net present value of future tax liabilities, thus acting as a lump-sum tax on existing owners (Coleman and Grimes, 2009). Given the importance of property and farmland in both household and bank balance sheets, any substantial decline in values could have repercussions for the wider economy and financial system. However, the introductions of capital gains taxes in Australia (1985) and in Canada (1972) did not have any noticeable immediate impact on aggregate house prices.

A realisation-based capital gains tax would need to be carefully designed to avoid introducing other distortions, namely "lock-in" effects leading to sub-optimal decisions over asset sales. Investors may be motivated to defer the sale of appreciated assets with good prospects, and conversely, to bring forward the sale of those that are depreciating. Although studies find that such effects do not tend to be significant (Burman and White, 2003), most countries put in place provisions to reduce their associated inefficiencies (Annex 2.A1). These include taxing only part of the capital gains, applying a reduced statutory tax rate or allowing exemptions for capital gains either below a minimum threshold or beyond a certain holding period. Allowing roll-over relief for principal residences is another common provision, which exempts the capital gains from tax when the sale proceeds are re-invested in a similar asset. The incentive to bring forward capital losses is commonly mitigated by ring-fencing, which allows capital losses to be offset only against current or future capital gains for tax purposes, and not other forms of income. A potential drawback to such an approach is that it may discourage risk-taking in certain cases, although the relevant evidence is mixed (OECD, 2006). An indexation allowance that exempts capital gains arising from inflation would better approximate taxation of real economic income, while lessening lock-in effects (NZ Treasury and IRD, 2009). This would need to be accompanied by an indexation of interest income, which is currently taxed on a nominal basis, in order to avoid tax-planning incentives. Furthermore, introducing a capital gains tax may entail reinstating the allowance for depreciation expenses, which was removed in the 2010-11 budget.[10]

Incorporating such design features into a capital gains tax inevitably raises the complexity of the tax system. Many countries allow exemptions for the primary residence (Annex 2.A1), which could facilitate public acceptance but at the expense of shifting even greater tax advantage onto owner-occupied housing relative to other assets. Nevertheless,

even a tax that partially exempts capital gains on principal dwellings could still effectively reduce the bias towards property investment. To the extent that a capital gains tax is not implemented, some alternative options to reduce tax incentives for housing include increasing the tax advantages of alternative saving vehicles (discussed in Chapter 1) and limiting the tax deductibility of rental property losses. As second best approaches, however, these alternative options may alleviate current distortions in the system only at the cost of moving further away from neutrality or introducing other distortions.

Limit the tax-deductibility of losses on property investments

Distortions in the rental property market could be targeted directly by reforming the tax treatment of income and losses arising from rental property investments. This could be achieved by limiting the extent to which losses can be deducted from taxable labour income, for example via ring-fencing. In particular, the United Kingdom allows rental property losses to be deducted only against profits from other properties, or to be brought forward to offset future rental income, whereas the United States permits such deductions only up to a certain income ceiling. Additionally, rental properties could be treated as separate investment entities and subjected to a flat tax rate, as currently applies to trusts or superannuation funds. This would eliminate the existing regressivity that arises from the ability to deduct losses at the marginal income tax rate.

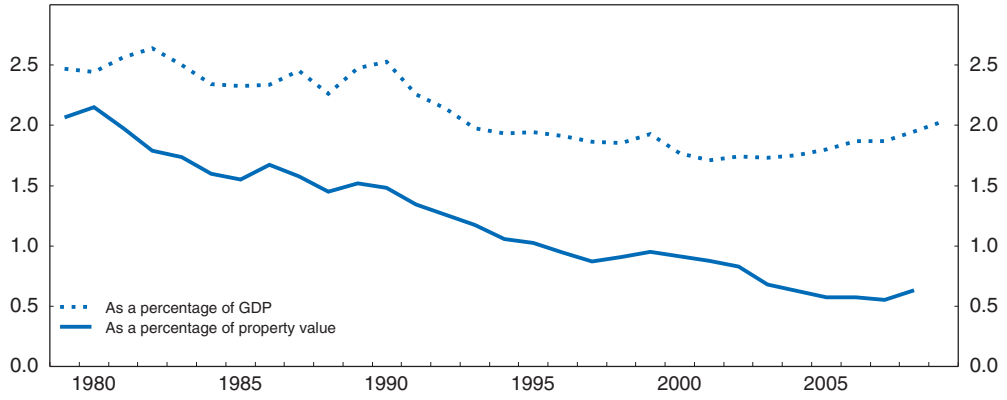
A tax on imputed rent, property or land

The economic rationale for taxing imputed rents is that owner-occupied housing represents an advantage in the sense that disposable income is boosted by the amount of rent that does not need to be paid. This imputed rent can also be seen as a return on private investment in real estate (Frick and Grabka, 2003). Many countries do not tax imputed rental income due to the high administrative and compliance costs of measuring it accurately (OECD, 2010a). In these circumstances, denying mortgage interest deductibility and imposing property taxes can act as a second best approach to counteract the resulting bias towards housing investment (Johansson *et al.*, 2008). Furthermore, Coleman (2009) finds that in the absence of a capital gains tax, a property tax can act as a good substitute in producing similar effects on welfare, rents, prices and home ownership rates.[11]

New Zealand already denies mortgage interest deductibility to owner-occupiers and collects property taxes from homeowners in the form of local "rates". These rates are administered by local governments and thus vary by jurisdiction. Altogether they account for almost 60% of local government revenue and fund the bulk of their spending on public services such as roads, pipes and sewerage networks. Local property tax revenues averaged 2% of GDP as of 2008, roughly on par with the OECD average but have declined as a percentage of housing values from 2.2% in 1980 to 0.65% in 2008 (Figure 2.11).

As in the case of capital gains taxes, distributional and fairness considerations can pose obstacles to increasing property taxes, since property values do not necessarily indicate ability to pay. Tax rates are also differentiated across residential, commercial and rural properties, to a large extent to adjust its incidence across different taxpaying groups, usually in favour of rural and residential properties. However, the result of increasing use of differential rates and fixed charges is that the rating system has become more regressive, and there is considerable public misunderstanding about how it works (Local Government Rates Inquiry Panel, 2007). These features have probably contributed to growing public resistance towards increasing local property taxes. In general, these issues

Figure 2.11. **NZ average local property taxes**



Source: Reserve Bank of New Zealand and OECD calculations.

StatLink http://dx.doi.org/10.1787/888932399734

can be addressed by designing the tax to be progressive or providing subsidies to low-income households (OECD, 2010a). For example, the property tax rate applied could be made dependent on personal income tax rates, allowing a closer approximation to a tax on imputed rents. Indeed, a rebate scheme is in place for low-income households in New Zealand, and some local authorities address cash-flow problems by allowing rate payments to be postponed until the property is sold or until the owner's death.

Currently, property values are assessed by local councils every three years and given a Council Rating Value, which comprises a land value (value of undeveloped land), capital value (value at the date of the previous valuation), and the value of improvements (the difference between capital and land values). In the past, the majority of the 74 local authorities set rates based on land value, but over time most have shifted towards using capital values, because they are perceived to better reflect ability to pay (McCluskey *et al.*, 2006).[12] Meanwhile, the bulk of the increase in property values reflects rising values of land, rather than improvements (Grimes and Aitken, 2006), suggesting that land values may be the appropriate basis for the tax.

A land tax would tend to be more efficient than a property tax. Because land is fixed in supply, it is relatively price-inelastic, and therefore deadweight losses from taxing it are relatively low. There are also indications that a land tax would be more progressive than a property tax in New Zealand, since people with higher income tend to live on more valuable land (Coleman and Grimes, 2009; Kerr *et al.*, 2004). Such a tax would offer the additional advantages of a broad base and relatively easy administration, given the existing local government rating system. A challenge posed by the land tax, however, is that it would disproportionately affect owners of land-intensive properties such as farmers, forestry owners and Māori communities. Since such landowners tend to have low per hectare land value, this issue could be addressed by taxing land on the basis of value per hectare (Coleman and Grimes, 2009).

Raising such a tax could immediately lower land and property values by the amount of the increase in discounted future tax liabilities, but these shocks could be minimised via grandfathering the current treatment of existing owners. Another drawback to a property or land tax is that it would fail to address the aforementioned distortions in rental property markets, since the 2007 Income Tax Act would allow the expense to be deducted from

taxable income. In general, this Act allows the deductibility of most expenses incurred for the purpose of deriving assessable income, with the exception of depreciation (and that only since the 2010-11 budget).[13] Nonetheless, such a tax would reduce the economic benefits to owner-occupiers arising from untaxed imputed rents.

Eliminate untargeted home ownership subsidies

The lower tax rate on income earned within PIEs such as KiwiSaver enhances incentives to diversify household portfolios using these vehicles. However, this effect is counteracted by the option for all KiwiSaver members (of longer than three years) to withdraw all personal and employer contributions, as well as all returns, to purchase a first home. Since returns are taxed at a lower rate and employer contributions are both compulsory and tax-deductible, such withdrawals effectively subsidise employed individuals' home ownership. Furthermore, the subsidy is provided to all members regardless of income level. Tax-free withdrawals should therefore be treated as interest-bearing loans or limited to low-income members.

The social housing sector

The government helps low-income families to access affordable housing through subsidies as well as social dwellings, based on various income and needs criteria. Almost one-quarter of all households receives some form of government support, of whom one-sixth live in public housing. Most support is administered through the national crown agency, Housing New Zealand Corporation (HNZC), although some public dwellings are provided by local governments as well. The current government's objective for social housing is to "provide cost-effective state housing and associated services to those most in need, for the duration of their need" (Housing New Zealand Corporation, 2010). This section discusses some options to improve the effectiveness of this model of social housing provision.

Almost 70% of government expenditure on social housing assistance is distributed as subsidies to people living in private accommodation. This Accommodation Supplement (AS) is provided through the Ministry of Social Development to those who meet certain income criteria. The subsidy covers 70% of the recipient's weekly cost minus an entry threshold, which can be used to offset some of the cost of board, rent or mortgage payments. The amount received is subject to a regional maximum. More than half of private renters receive the AS, and 4% of homeowners use it to reduce the burden of mortgage payments, for a total of about 330 000 individuals. Despite a fairly constant number of AS recipients between 2000 and 2008, spending on the AS increased by an average of 4.7% per year, reflecting an increase in housing costs (HSA Group, 2010). The recession then led to an almost 20% jump in the number of AS recipients in 2009, with a corresponding hike in spending.

An additional 67 700 households live in a state dwelling, accounting for roughly 15% of all recipients of social housing assistance. Eligibility to live in a social dwelling is determined based on needs, level of income and wealth, and residency status. Priority is determined by risk levels faced by candidate households with respect to affordability, adequacy, suitability, accessibility and sustainability. New vacancies are allocated by matching housing with applicants' requirements, with priority given to those with the highest risk. Among the households who live in a HNZC dwelling, 89% pay a below-market, income-related rent (IRR). The IRR is set at 25% of the tenant's net income up to the NZ Superannuation threshold, after which half of every dollar earned is charged until the

market rent is reached. The market rent for each state dwelling is set based on a benchmark for private rental accommodations in the proximity of the building. Eligibility for income-related rent assistance is reassessed when circumstances change, and 11% of social tenants pay the market rent or close to it. The average length of tenancy in a given state dwelling is 7.8 years. This compares with a national median of 2.0 years spent in the same residence for private renters, and 6.3 years for owner occupiers (based on the 2006 census). This lock-in effect is one of the most costly features of social housing provision, as the reduced mobility can harm re-employment prospects in the event of a negative local labour-market shock.

In early 2010, the government-appointed Housing Shareholders Advisory Group published a report (HSA Group, 2010) advising on measures to improve the effectiveness and efficiency of the social housing sector. The government has since accepted a number of its recommendations, including an increasing focus on helping those with priority housing needs and introducing reviewable tenancies for all new state housing tenants from July 2011. Until now, tenants' eligibilities have never been re-assessed, and a number have therefore remained in the same dwelling over the long term, even if their household size has shrunk or they could afford market rents. The perception that state dwellings offer a "lease for life" reduces the capacity to deliver housing to those most in need and may also distort the private housing market. While the new policy is therefore a welcome step, introducing regular needs re-assessments for all existing tenants would further improve the ability of the available supply to match household needs. For example, at end-2009 almost 4% of state dwellings were being underutilised by two or more bedrooms, while a similar share were overcrowded (HSA Group, 2010).

The targeting of higher-need households has increasingly concentrated socio-economically disadvantaged groups in certain areas (Housing New Zealand Corporation, 2010), which may create adverse neighbourhood effects in the form of depressed educational and health outcomes or access to services. Moving towards terminating state rental contracts for those whose eligibility has changed may further reinforce residential segregation and social exclusion, while possibly aggravating work-disincentive effects for tenants. The introduction of the Tenant Home Ownership programme in June 2009 should help limit these effects, as it enables occupants who are able to secure mortgage financing to purchase their dwelling outright from the state. Introducing regular tenancy re-assessments would need to be accompanied by assistance in securing new housing for those evaluated to be no longer in need, as well as increased efforts to actively assist all tenants to achieve financial independence and self-sufficiency. The HNZC may also wish to consider whether certain tenants requiring more permanent housing provision, such as the elderly and seriously disabled, may benefit more from financial assistance for placement in specialised facilities that can better cater to their needs. Meanwhile, the ability to transition other tenants into self-sufficiency will depend on the availability of affordable housing in the private market, which has become increasingly squeezed by rising property prices.

Inflexibility in the supply of social housing has resulted in lengthening high-priority waiting lists in certain regions, in contrast with an oversupply of social housing in others with low demand, with a potential net shortage of over 10 000 units (HSA Group, 2010). As of mid-2010, over 60% of priority applicants were waiting for housing in Auckland, where only 44% of HNZC properties are situated. These misalignments are expected to be addressed over time through an asset management strategy. Supply has traditionally been entirely publicly funded and therefore constrained by state finances. Recently announced

intentions to begin exploring partnerships with non-profit providers and private-sector builders should help HNZC to improve its capacity to expand the supply of affordable housing more efficiently in the future.

Rising property values have placed increasing financial pressures on the social housing sector. The government compensates HNZC for the difference in rent paid by tenants and the market rent on the property through an IRR subsidy. Between 2000 and 2008, the cost of the IRR subsidy increased by an average of 6.2% annually, reflecting the faster growth of market rents relative to social housing tenant incomes. The average cost per recipient of an IRR subsidy in 2008-09 was almost NZD 8 500 a year, more than double that spent annually per AS beneficiary. Furthermore, the sum of rents paid and IRR subsidies does not sufficiently cover HNZC's operating expenses. This is because it tends to face higher costs than the average private landlord, related to subsidised water rates, higher maintenance expenses due to the age and condition of state dwellings, and delivery of various other programmes such as community renewal, energy-efficiency retrofits and housing policy research. To improve long-term financial viability, the HNZC should discontinue water rate subsidies to those paying market rent and consider divesting non-core activities and programmes that overlap with the functions of other government departments. A more targeted focus may result in improved alignment of the needs of low-income households with services provided, as well as efficiency gains.

Reducing supply rigidities

An important factor in the proper functioning of housing markets is the extent and speed with which housing supply responds to changes in prices. The supply elasticity determines the degree to which demand shocks materialise into changes in house prices. Moreover, an insufficient supply of new housing may have wider implications for the economy by boosting expectations of future house-price increases and driving speculative activity that pushes prices above fundamental levels (Barker, 2008). The speed at which new housing construction adjusts to demand depends on several factors, including the degree of land scarcity and competition in the residential construction industry, the restrictiveness of land-use planning policy, the availability of skilled trade workers and the state of infrastructure. At the aggregate level, New Zealand's housing supply appears to respond reasonably well to changes in house prices over the long run relative to other OECD countries, but demand shocks nevertheless tend to have persistent effects on the level of house prices (Box 2.3).

Supply elasticities vary considerably across regions, reflecting differences in land-price movements as well as regulatory constraints (Grimes and Liang, 2007). Factors that push up land prices may stifle new housing construction by squeezing the potential profits of developers (Grimes and Aitken, 2006). Alternatively, they may shift new housing supply towards multi-unit apartment buildings, which are less land-intensive than detached dwellings, as has occurred in Auckland.

The planning system that regulates housing supply is fairly complex and is framed by three pieces of legislation that govern different aspects of land development. The Resource Management Act 1991 (RMA) provides the framework for promoting the sustainable management of natural resources (see Chapter 4) and addresses land-use development based on its effects on the environment. Implementation of the RMA generally takes the form of designations and zoning designed to manage environmental effects. The Local

Box 2.3. **Estimates of housing supply responsiveness**

Recent work by the OECD (Caldera Sánchez and Johansson, 2011) derives housing supply and demand elasticities over the short and long run across 21 OECD countries by jointly estimating equations for real house prices and real residential investment. The results suggest that the factors that determine long-run housing supply in New Zealand are the levels of real house prices and real construction costs (Table 2.2). In the long term, residential investment adjusts to price signals on a similar scale as the average elasticity across the 21 OECD countries, but the short-run supply response is large relative to elsewhere. Population changes do not appear to significantly influence the housing supply in the short or long run, but this may reflect their correlation with house prices: increases in the population appear to have significantly larger-than-average effects on house prices in the long term, which points to supply rigidities.

Table 2.2. **Long-run and short-run elasticities**

	NZ coefficient	Average OECD		NZ coefficient	Average OECD
Long-run house price determinants			**Long-run housing supply determinants**		
Income	0.9*	2.0	Lagged real house price	0.7*	0.7
Dwelling stock	–15.2*	–4.3	Lagged real construction cost	–1.0*	–0.2
Interest rate	0.2	–0.4	Population	0.5	3.4
Population	24.2*	6.9	Constant	19.5*	–
Constant	–108.6*	–			
Short-run house price determinants			**Short-run housing supply determinants**		
Income growth	0.5*	0.3	Lagged real house price growth	1.4*	0.5
Dwelling stock growth	–0.3	–0.7	Lagged real construction cost growth	0.2	0.1
Interest rate change	0.1	0.0	Population growth	24.2	1.7
Population growth	13.9*	7.6			
Speed of adjustment	–0.1*	–0.1	Speed of adjustment	–0.4*	–0.2
Estimation period	94Q3-07Q4	–	Estimation period	94Q3-07Q4	–

* Denotes statistical significance at the 10% level or more. Average OECD coefficients are unweighted averages of significant coefficients, with insignificant coefficients assumed to be zero.

1. Equations are estimated jointly using a seemingly unrelated regression model.

Source: Caldera Sánchez and Johansson (2011).

The results also indicate that increasing construction costs tend to restrain residential investment in the long run more in New Zealand than in other countries. This finding may reflect low productivity in the construction sector compared to other countries, as well as declining labour productivity in this industry over time (Building and Construction Sector Productivity Taskforce, 2009). One potential reason for poor productivity performance is that the geographical dispersion of local markets tends to raise unit costs for most construction materials relative to other countries. High transport costs thus result in more separated plants of a smaller scale and less local competition (Page, 2009). Other possible factors identified by the Taskforce include a shortage of skills, low innovation and inefficient regulation.

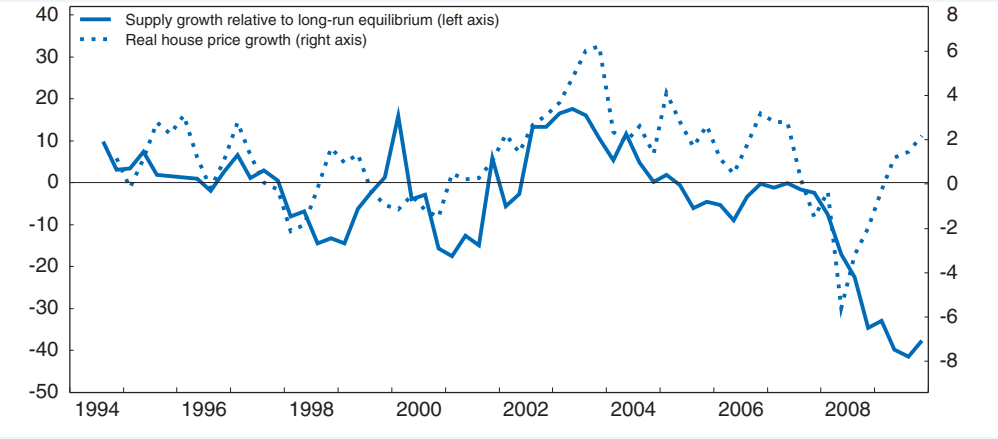
Applying these estimated supply elasticities and extrapolating to the end of 2009 would suggest that real residential investment increased substantially above long-run "equilibrium" levels during the first years of the housing boom but have fallen well below since prices peaked in 2007 (Figure 2.12). The reasons for this supply contraction are not entirely clear, but it may indicate that demand conditions have been weaker than suggested

Box 2.3. **Estimates of housing supply responsiveness** *(cont.)*

by currently high price levels. Constrained credit conditions and heightened uncertainties faced by property developers since the global financial crisis may have also played a role, as these factors are not taken into account in the equations.

Figure 2.12. **Supply has fallen below long-run levels**

Percentage



Source: Statistics New Zealand, QVNZ, OECD calculations.

StatLink http://dx.doi.org/10.1787/888932399753

Government Act 2002 (LGA) provides guidance for local councils' infrastructure and investment plans, and the Land Transport Management Act 2003 (LTMA) outlines the system for national and regional transport strategy, planning and funding. In addition to the regulatory constraints on land use, the Building Act 2004 governs design and construction practices. Regional and local governments use these laws as guidelines to develop different economic development strategies, with district plans implemented at the local council level. The restrictiveness of land-use regulations within regional development strategies constrains housing supply in these regions.

Planning is important because land use generates externalities to the wider community, ecosystems and the environment that are not factored into the market price. For example, land can serve as a public good by providing open space for communities or by naturally regulating water flow to avoid flooding of downstream properties (Foresight, 2010). Policies should thus aim to integrate such benefits into the value of the land by evaluating all alternative uses and considering where these services would ideally be placed with respect to the location of residences and businesses. Price mechanisms that assign a socially optimal value to land allow the best uses to be realised and are more efficient than regulation (Foresight, 2010). Such values can be estimated in various ways, but in any case this is a complex task and subject to large uncertainties over the long-term impact of marginal developments on the environment and overall social welfare. Proper estimation of costs and benefits is particularly important for assessing changes in land use that are irreversible. Assuming these valuations can be reasonably estimated, pricing land development to reflect the marginal social cost incurred would lead to a more efficient planning framework than imposing regulation. It is probable that current zoning

restrictions already reflect local councils' evaluations of optimal land use, but incorporating pricing mechanisms would ensure that incentives are aligned for private-sector development. Nonetheless, in cases where social costs cannot be accurately estimated, it may be practical to retain some form of zoning regulation.

Pricing mechanisms to capture the cost of land development are currently used by local councils in two different forms: "financial contributions" and "development contributions". *Financial contributions* are levied by local governments (under the RMA) on parties intending to subdivide or increase existing land use to reflect the environmental costs of new development. However, in many cases they do not appear to be used to influence the location of development based on an evaluation of optimal land use. Instead, zoning restrictions continue to dictate where development can occur, with financial contributions charged at a fixed rate based on the type of development, while the revenues collected are used to remedy any adverse environmental effects that result.[14] *Development contributions* are charged under the LGA to recover some of the future infrastructure costs of accommodating growth. By forcing developers to internalise the environmental externalities and share the cost of new infrastructure investment, these instruments can promote efficiency by preventing excessive development. Conversely, they may discourage worthwhile development if set too high.

Land-use planning can be improved

Development strategies differ greatly between major urban areas such as Auckland, Wellington and Christchurch, and regional cities like Hamilton and Tauranga. Regional cities generally accommodate growth through outward expansion, greenfield development and the conversion of farmland and rural lots to residential land (Fairgray, 2009). Meanwhile, major urban areas tend to promote growth through brownfield development and densification within existing urban boundaries, with limited outward expansion or greenfield development. In particular, this latter "compact city" approach has been adopted by Auckland's Regional Growth Strategy (1999) and Christchurch's Urban Development Strategy (2004).

Policies to promote compact cities have been implemented in many OECD countries to guide the location and timing of new urban development in order to minimise environmental impacts (OECD, 2010b). Studies show that urban areas that are denser may contribute to reducing energy consumption by shrinking vehicle travel distances (Kamal-Chaoui and Robert, 2009; SOLUTIONS, 2009). In general, public transportation is more cost efficient when origins and destinations are more densely concentrated rather than dispersed. Compact cities may also be desirable from an economic standpoint because of the productivity and efficiency gains from agglomeration. However, these benefits should be weighed against potential social costs from crowding, noise and reduced biodiversity. For instance, higher-density urban areas may harm biodiversity due to increased runoff from impermeable surfaces (SOLUTIONS, 2009). Furthermore, promoting higher-density development on its own is not sufficient to reduce carbon emissions and may even increase them if it leads to more congestion and slower travel speeds (Foresight, 2010). Travel distances can be reduced only if communities are designed to maximise connectivity with work, amenities, schools, community facilities and open space. This entails infrastructure that accommodates cycling, walking and strategic mass-transit linkages, integrated with a greater mixing of residential, commercial and community land uses (Kamal-Chaoui and Robert, 2009).

Regardless of urban form, planning policies will facilitate climate-change goals most effectively if they integrate residential development with public transit options and the location of jobs. The framework should also ensure that prices and incentives for land and road use are aligned with policy objectives. Charging a toll on urban commuters tends to increase the cost of road travel, creating incentives for residents to relocate into the city and thus shrinking its spatial size and raising population density (Brueckner, 2007). Although such tolls may encourage a relocation of some economic activities to fringe locations, thus expanding demand for land and travel distances (Quddus *et al.*, 2007), appropriate pricing mechanisms that reflect the environmental cost of land development should mitigate these effects.

Re-evaluate urban growth boundaries

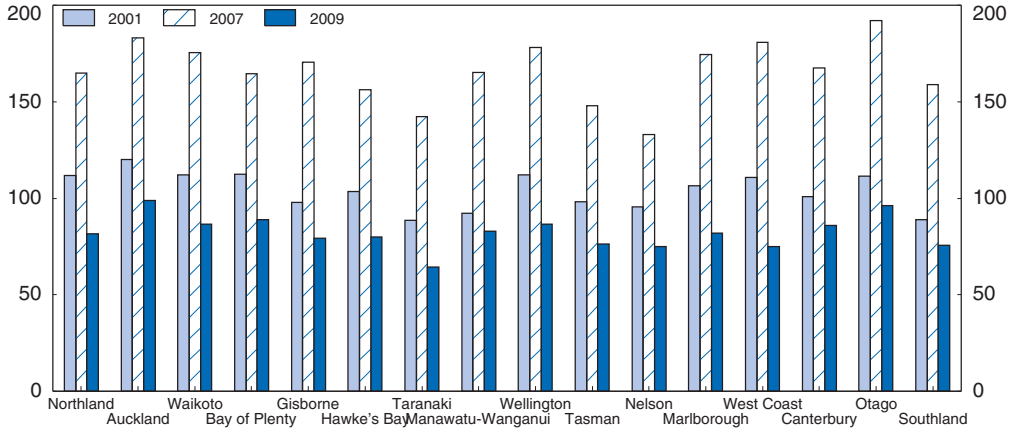
Auckland's Regional Growth Strategy (RGS) is often identified as a major culprit behind the region's dramatic land price increases. Adopted in 1999, the RGS aims to promote a compact city capable of accommodating at least two million inhabitants by 2050 while protecting rural and coastal environments. The council has pursued this objective through two main avenues. The first is to define explicit boundaries within which urban development is to be contained, known as the Metropolitan Urban Limits (MULs). The concept of urban boundaries was first introduced in Auckland over 50 years ago but has evolved over time and been increasingly enforced. The aim of the MULs is to control urban sprawl and limit adverse environmental effects on surrounding areas. The second element of the growth strategy involves intensifying development around multiple growth nodes and transport corridors, which has not progressed far due to a number of obstacles.

Urban growth boundaries have been adopted by a number of cities in the United States, the United Kingdom, Japan and Switzerland, with varying degrees of success (OECD, 2010b). On the one hand, a restricted area that is set too large may be ineffective for limiting urban sprawl. On the other hand, defining a perimeter that is too small may quickly drive up land and housing prices within the containment area. Indeed, Grimes and Liang (2007) find that, after controlling for other factors, Auckland's MULs have boosted land prices to 8 to 13 times the price of land outside the boundaries and that they have become an increasingly binding constraint on land supply over time. Furthermore, land just beyond the borders has also experienced large relative price increases because of speculation that the MULs will be expanded. There are indications that land price pressures have acted as a considerable constraint on housing supply in Auckland (Grimes *et al.*, 2006), thus exacerbating housing-market imbalances and expectations of further price increases. Relative to rent levels, Auckland's house price increases have exceeded those of most other regions since 1992 (Figure 2.13), although not by a large margin.[15] This small difference may reflect the use of restrictive zoning practices in other regions as well, and/or the fact that common macroeconomic factors have played an even larger role in driving up house prices across the country.

Thus far, the MULs have successfully controlled urban expansion to a large extent via infill, but these opportunities are being exhausted. Despite environmental objectives, considerable degradation has nonetheless occurred in the quality of water, air and open space (Hill, 2008). These costs suggest a more comprehensive analysis is needed of the MULs' social, economic and environmental implications (Ministry for the Environment, 2010). Urban growth boundaries are generally adjusted as needs evolve, in most cases every 10-20 years (OECD, 2010b). As a tool to contain excessive urban expansion, studies show

Figure 2.13. **Regional price-to-rent ratios**

Index 1992 = 100



Source: QVNZ, Department of Building and Housing.

StatLink http://dx.doi.org/10.1787/888932399772

that urban growth boundaries act as a second best policy relative to levying a congestion toll on commuters, because they are far less effective in promoting densification within the area (Brueckner, 2007). Reduced carbon emissions could be achieved more efficiently through higher charges for road use and parking within the city, combined with substantial enhancements to mass transit service.

Better integrate urban planning and development with transport and infrastructure policy

A first evaluation of the RGS by the Auckland Regional Council (ARC, 2007) noted that residential densification was not occurring in the majority of growth centres and corridors that had been targeted for development. Furthermore, objectives to promote development within those growth nodes were often not being incorporated into district plans at the local council level. For example, a number of district zoning plans in central Auckland continue to designate building height restrictions and minimum car-park requirements that appear to contradict goals for densification. One major obstacle preventing the RGS from being implemented effectively at the local level appears to be uncertainty over how to consolidate guidelines from the three pieces of legislation governing land development, causing long delays in the approvals process for building permits.

As a whole, the current planning approach remains overly complex and fragmented because the three laws were not designed to work together as an integrated urban planning system (Ministry for the Environment, 2010). The current system requires development proposals to be broken down into environmental, infrastructure and economic components, which are then addressed separately by the relevant legislation (Ministry for the Environment, 2010). This has resulted in a failure to align regulation and funding to integrate transport with land use and economic development. Land-use planning has often been disconnected from infrastructure or transportation spending decisions, with a lack of co-ordinated infrastructure provision at the regional and local level (ARC, 2007).

The lack of certainty over whether the appropriate infrastructure will be installed to support new residential construction can pose insurmountable risks to private developers,

impeding the delivery of housing. Greater use of public-private partnerships would help to provide more predictability and reduce risks to developers. Improved engagement is also needed among various levels of government, private-sector developers and infrastructure providers to ensure that the policies adopted are feasible, coherent, equitable and well understood.[16] Current efforts to reform the RMA to better incorporate the needs of urban environments via an aligned framework for land, infrastructure and transport are therefore welcome. The recent replacement of the Auckland Regional Council and its seven district councils by one unitary body should also improve co-ordination, as should the current development of a "spatial" planning system. A spatial planning system sets out a strategic framework across sectors to guide future development and policy by *inter alia* improving investment certainty and providing guidance on the location and timing of future infrastructure, services and investment. Extending the principles of spatial planning would also benefit smaller, developing cities across the country, given that short-sighted urban planning decisions committed in the early stages of development can be difficult to reverse.

The new planning system should include a comprehensive framework to formalise the pricing of land based on alternative uses, with more systematic use of pricing instruments such as financial contributions to influence the location of development. For example, levies could be discounted or waived in areas situated along public transit routes to reflect the environmental benefits associated with reduced car dependency. Meanwhile, the use of development contributions to fund infrastructure investment could also be better designed to encourage worthwhile private-sector development. In their current form, the charges force developers to assume the long-run costs of infrastructure upfront when cash flow may be most constrained, rather than distributing them to the users over time (Ministry for the Environment, 2010). This has the effect of assigning a disproportionate share of infrastructure costs to new dwellings, thereby reducing their affordability, while subsidising existing residents (Fairgray, 2009). It may also discourage private-sector development where it is most beneficial. To address these issues, these levies could be set in consultation with developers and local communities to promote transparency and fairness, with payments allowed in instalments over time. The cost of infrastructure could be more evenly distributed by charging higher user fees to those benefiting from the services provided, perhaps through higher targeted local rates for property owners or parking fees in the area.

Another factor that may limit progress towards densification is that household preferences may continue to favour larger, detached dwelling units. This may in part reflect perceptions of poor-quality development and urban design of apartment buildings, which increase concerns and public resistance to higher-density housing types (ARC, 2007). One reason for this may be a lack of experience or design skills among developers of medium- to high-density housing, given the traditional orientation towards low-density dwelling types. Incorporating guidelines for multi-unit developments into the Building Code could also help, detailing provisions for natural light, ventilation, noise insulation and storage space. Nonetheless, household attitudes and lifestyles are diverse, and planning policies will need to adapt to a range of density preferences. This may involve expanding energy generation from renewable sources more suitable to lower densities (such as ground-source heat pumps) or adopting technologies that facilitate intermodal transport links to reach more dispersed locations (Foresight, 2010).

Box 2.4. **Recommendations for the housing sector**

Reduce tax distortions

- Eliminate tax incentives that bias savings decisions towards housing investment by introducing a comprehensive tax on capital gains realised beyond the year of implementation, allowing rollover relief (until death) for primary residences to mitigate lock-in effects. Partial exemption of capital gains on primary residences may be considered as a second best approach if it facilitates public acceptance of the tax. In the event that a capital gains tax is deemed politically infeasible, consider the following alternative options:
  - Limit the tax-deductibility of losses from rental property investments by allowing them to be offset only against future rental income. Consider taxing such investments at a separate flat-rate tax to reduce regressivity.
  - Further reduce the taxation of returns earned on alternative savings vehicles.
- To offset the distortions from untaxed imputed rents, consider introducing a property or land tax based on the land value per hectare, where the rate levied is scaled by the owner's marginal personal income tax rate. Remove local rate differentials across residential, commercial and rural properties.
- Modify KiwiSaver such that withdrawals for first-home purchases are treated as interest-bearing loans or limited to low-income members.

Improve ability of social housing to reach those most in need

- Begin regular tenancy re-assessments for all occupants of state housing, accompanied by increased efforts to assist all tenants to secure new dwelling options and achieve financial independence and self-sufficiency.
- Evaluate whether those requiring more permanent housing provision such as the elderly and seriously disabled may benefit more from financial assistance for placement in specialised long-term housing facilities better able to cater to their needs.
- To improve long-term financial viability, remove water rate subsidies to tenants paying market rents. Consider outsourcing non-core activities that may be more efficiently delivered by NGOs. Improve the capacity to expand the supply of affordable housing more efficiently through partnerships with non-profit providers and private-sector developers.

Reduce supply rigidities within the limits of environmental objectives

- Adopt spatial planning systems for all urban areas to improve alignment of regulation and funding to better integrate strategies for land use, economic development, transport and infrastructure. Reform the RMA to better incorporate urban development needs.
- Increase engagement among various levels of government, private-sector developers and infrastructure providers to reduce uncertainties and hold-ups that have delayed the delivery of housing supply.
- Re-evaluate Metropolitan Urban Limits to ensure a proper assessment of social, economic and environmental costs and benefits. Undertake a comprehensive framework to value land based on formal cost-benefit analyses of alternative uses, considering all environmental, social and economic externalities to development. Include more systematic use of pricing mechanisms to influence the location and nature of development such as financial contributions, road user charges, congestion tolls and parking fees, accompanied by improvements in public transit services.
- Distribute the cost of infrastructure more evenly by complementing development contributions with higher user fees levied on those benefiting from the services provided.

Notes

1. House price growth is based on the QVNZ index, which is constructed by taking the sales price relative to the current government rating valuation of a property, which provides an inherent quality adjustment, assuming the underlying rating valuation is correct. The rating value is based on assessments conducted by local councils every three years.
2. This information is based on various discussions with government and private-sector analysts, as well as studies conducted by the RBNZ (for example, Briggs, 2007).
3. The majority of mortgage contracts are on fixed rates of less than one year.
4. This excludes changes in property tax, utility expenses and maintenance expenditures.
5. Behavioural economic theories suggest that people tend to save more if it is done automatically, rather than having to choose to set aside an amount each month.
6. However, some specific capital gains are taxed to varying degrees, such as on land and property sales if they were purchased for profit-making purposes such as in the case of developers or traders, as well as on foreign shares and some intellectual property.
7. For buildings with a 50-year economic life, this system implied a depreciation rate of 4% per year. This rate is equivalent to a double-declining balance approach that may have been too high for rental property, given that a straight-line system would imply a 2-3% depreciation rate. Furthermore, investors often claimed separate (higher) depreciation rates for different parts of the building (*e.g.* wiring, plumbing), which in principle should have then slowed the depreciation rate of the building itself.
8. This is a longitudinal survey conducted by Statistics New Zealand which started in October 2002 and was to have been run annually for eight years. The estimates in Le *et al.* (2010) are based on the 2004 and 2006 waves.
9. These were removed on buildings with estimated useful lives of at least 50 years. Hence, "short-lived" structures remain eligible for depreciation allowances, provided that the owner can demonstrate the case for such treatment.
10. This would allow for more symmetric tax treatment of capital appreciations and depreciations and would require distinguishing the tax treatment of undeveloped land from that of the building (the "improvement" component of NZ's property valuation system). While land generally appreciates in value, the depreciation of the building would be deducted from the cost base used to calculate taxable capital gains.
11. This finding assumes a flat-rate property tax and is conditional on inflation remaining low and stable.
12. As exceptions, two local authorities set rates based on an annual value, which is the greater of i) the estimated gross annual rental less 20% (or 10% for vacant land) or ii) 5% of the property's capital value.
13. This includes expenses arising from mortgage interest, insurance, bank fees, advertising, repairs and maintenance, travel costs, solicitor fees and property management.
14. For example, in Auckland all new residential developments are charged a fixed rate per dwelling unit (to be paid in cash or land), with revenues to be applied to expanding surrounding park space. Meanwhile, financial contributions from new business developments are used to address the resulting needs for additional signage or lighting, or pedestrian footpaths, etc.
15. Regional price-to-rent ratios are compared as a proxy for affordability, in the absence of regional data on household disposable income. In principle, rent levels would be expected to increase with land prices but may have been restrained by lower income growth among renters (relative to homeowners).
16. For example, the Auckland RGS was implemented without the endorsement by the central government or developers of the locations or economic feasibility of densification plans (Ministry for the Environment, 2010).

Bibliography

ANZ (2007), *Survey of Property Investment*, 2007.

ANZ (2008), *Survey of Property Investment*, 2008.

ANZ (2009), *Survey of Property Investment*, 2009.

ANZ (2010), *Survey of Property Investment*, 2010.

Andrews, D., A.Caldera Sánchez and A. Johansson (2011), "Housing Markets and Structural Policies in OECD Countries", *OECD Economics Department Working Paper*, No. 836, OECD Publishing, Paris.

ARC (2007), "Growing Smarter: An Evaluation of the Auckland Regional Growth Strategy", Auckland Regional Council.

Barker, K. (2008), "Planning Policy, Planning Practice, and Housing Supply", *Oxford Review of Economic Policy*, 24(1), 34-49.

Bollard, A., B. Hodgetts, P. Briggs and M. Smith (2006), "Household Savings and Wealth in New Zealand", Reserve Bank of New Zealand, Wellington.

Briggs, P. (2007), "Lessons From the Economics Department's Work on Household Balance Sheets and Related Issues", Reserve Bank of New Zealand, *Bulletin*, 70, No. 4.

Brooks, M.R. and R. Cubero (2009), "New Zealand Bank Vulnerabilities in International Perspective", *IMF Working Paper* No. 09/224.

Brueckner, J.K. (2007), "Urban Growth Boundaries: An Effective Second-Best Remedy for Unpriced Traffic Congestion", *Journal of Housing Economics*, 16, 263-73.

Building and Construction Sector Productivity Taskforce (2009), "A Modern Efficient and Productive New Zealand Build Infrastructure Industry", Report of the Building and Construction Sector Productivity Taskforce.

Burman, L.E. and D. White (2003), "Taxing Capital Gains in New Zealand", *New Zealand Journal of Taxation Law and Policy*, pp. 355-86.

Caldera Sánchez, A. and A. Johansson (2011), "The Price Responsiveness of Housing Supply in OECD Countries", *OECD Economics Department Working Papers*, No. 837, OECD Publishing, Paris.

Case, K.E. and R.J. Shiller (1989), "The Efficiency of the Market for Single-Family Homes"*American Economic Review*, 79(1), 125-37.

Chen, D. and J. Mintz (2009), "Capital Taxation in New Zealand: A Review from an International Perspective", Background paper prepared for the Tax Working Group, Session 4, available at: *www.victoria.ac.nz/sacl/cagtr/twg/session-four.aspx*.

CMD Task Force (2009), "Capital Markets Matter", *Summary Report of the Capital Market Development Task Force*.

Coleman, A. (2009), "The Long-Term Effects of Capital Gains Taxes in New Zealand", *Motu Working Paper*, 09-13.

Coleman, A. and A. Grimes (2009), "Fiscal, Distributional and Efficiency Impacts of Land and Property Taxes", *Motu Working Paper,* 09-14.

Coulson, N.E. (2002), "Housing Policy and the Social Benefits of Homeownership", Federal Reserve Bank of Philadelphia *Business Review*, 2002 Second Quarter.

Deloitte (2010), "New Zealand Reverse Mortgage Study Grows to Total Loans of $447 m at 31 December 2009", *www.deloitte.com*.

DEMHOW (2010), "Releasing Housing Equity", Demographic Change and Housing Wealth Briefing 3, February, *www.demhow.bham.ac.uk*.

DiPasquale, D. and E. Glaeser (1999), "Incentives and Social Capital: Are Homeowners Better Citizens?", *Journal of Urban Economics*, 45, 354-84.

Doling, J. and R. Ronald (2010), "Property-Based Wwelfare and European Homeowners: How Would Housing Perform as a Pension?", *Journal of Housing and the Built Environment*, 25(2), 227-41.

DTZ New Zealand (2004), "Changes in the Structure of the New Zealand Housing Market", *Report prepared for the Centre for Housing Research*, New Zealand.

DTZ New Zealand (2008), "The Intermediate Housing Market in New Zealand", *Report prepared for the Centre for Housing Research*, New Zealand, December.

Fairgray, D. (2009), "Land and Housing Supply", Paper presented at the CHRANZ Housing Workshop "After the Boom – Where to From Here?", 9 July.

Foresight (2010), "Land Use Futures: Making the Most of Land in the 21st Century", *Foresight Land Use Futures Project Final Project Report*, UK Government Office for Science.

Fraser, P., M. Hoesli and L. McAlevey (2008), "House Prices and Bubbles in New Zealand", *Journal of Real Estate Finance and Economics*, 37, 71-91.

Frick, J.R. and M.M. Grabka (2003), "Imputed Rent and Income Inequality: A Decomposition Analysis for Great Britain, West Germany and the US", *Review of Income and Wealth* 49, 513-37.

Girouard, N., M. Kennedy, P. van den Noord and C. André (2006), "Recent House Price Developments: The Role of Fundamentals", *OECD Economics Department Working Paper*, No. 475, OECD Publishing, Paris.

Green, R. and M. White (1997), "Measuring the Benefits of Homeowning: Effects on Children", *Journal of Urban Economics*, 441-61.

Grimes, A. and A. Aitken (2006), "Regional Housing Markets in New Zealand: House Price, Sales and Supply Responses", *Report prepared for the Centre for Housing Research and Housing New Zealand Corporation*.

Grimes, A. and Y. Liang (2007), "Spatial Determinants of Land Prices in Auckland: Does the Metropolitan Urban Limit Have an Effect?", *Motu Working Paper* 07-09.

Grimes, A., A. Aitken, I. Mitchell and V. Smith (2006), "Housing Supply in the Auckland Region 2000-2005", *Motu Working Paper,* December.

Grimes, A., M. Holmes and N. Tarrant (2010), "New Zealand Housing Markets: Just a Bit-Player in the A-League?", *Motu Working Paper* 10-07.

Hargreaves, D. (2008), "The Tax System and Housing Demand in New Zealand", *Reserve Bank of New Zealand Discussion Paper Series*, DP2008/06.

Hill, G. (2008), "The Effectiveness of the Auckland Metropolitan Urban Limit – Ring-Fencing Urban Development", Paper presented at the Environmental Defence Society Conference, 11-12 June.

Housing New Zealand Corporation (2010), *Statement of Intent 2010-2013*.

HSA Group (2010), "Home and Housed: A Vision for Social Housing in New Zealand", Housing Shareholders Advisory Group, April.

IBFD (2009), *Global Individual Tax Handbook*, 2009, International Bureau of Fiscal Documentation, edited by Nick Cowley, Carlos Gutiérrez, Juhani Kesti and Mei-June Soo, IBFD, Amsterdam.

Johansson, A., C. Heady, J. Arnold, B. Brys and L. Vartia (2008), "Taxation and Economic Growth", *OECD Economics Department Working Paper*, No. 620, OECD Publishing, Paris.

Kamal-Chaoui, L. and A. Robert (2009), "Competitive Cities and Climate Change", *OECD Regional Development Working Paper*, No. 2.

Kerr, S., A. Aitken and A. Grimes (2004), "Land Taxes and Revenue Needs as Communities Grow and Decline: Evidence from New Zealand", *Motu Working Paper* 04-01.

Kida, M. (2009), "Financial Vulnerability of Mortgage-Indebted Households in New Zealand – Evidence From the Household Economic Survey", *RBNZ Bulletin*, March.

KPMG (2010), *KPMG's Corporate and Indirect Tax Survey 2010*.

Le, T., J. Gibson and S. Stillman (2010), "Household Wealth and Saving in New Zealand: Evidence from the Longitudinal Survey of Family, Income and Employment", *Motu Working Paper* 10-06.

Local Government Rates Inquiry Panel (2007), *Funding Local Government: Report of the Local Government Rates Inquiry*, *www.ratesinquiry.govt.nz*.

McCluskey, W., A. Grimes, A. Aitken, S. Kerr and J. Timmins (2006), "Rating Systems in New Zealand: An Empirical Investigation into Local Choice", *Journal of Real Estate Literature*, 14, 381-97.

Ministry for the Environment (2010), "Building Competitive Cities: Reform of the Urban and Infrastructure Planning System: A Technical Working Paper", Wellington, October.

Morrison, P. (2008), "On the Falling Rate of Home Ownership in New Zealand", Centre for Housing Research, Aotearoa New Zealand.

New Zealand Treasury (2010), "Saving in New Zealand – Issues and Options", Report prepared for the Savings Working Group, September.

Noord, P. (van den) (2006), "Are House Prices Nearing a Peak? A Probit Analysis for 17 OECD Countries", *OECD Economics Department Working Paper*, No. 488, OECD Publishing, Paris.

Noord, P. (van den) and C. Heady (2001), "Surveillance of Tax Policies: A Synthesis of Findings in Economic Surveys", *OECD Economics Department Working Papers*, No. 303, OECD Publishing, Paris.

NZ Treasury and IRD (2009), "The Taxation of Capital Gains", *Background paper for Tax Working Group,* Prepared by Inland Revenue Department and the New Zealand Treasury.

OECD (2000a), *OECD Economic Surveys: New Zealand*, OECD Publishing, Paris.

OECD (2000b), "Disparities in Regional Labour Markets", Chapter 2 of *OECD Employment Outlook*, pp. 31-78, OECD Publishing, Paris.

OECD (2006), "Taxation of Capital Gains of Individuals: Policy Considerations and Approaches", *Tax Policy Studies* No. 14, OECD Publishing, Paris.

OECD (2010a), *OECD Tax Policy Reform and Economic Growth*, Tax Policy Studies No. 20, OECD Publishing, Paris.

OECD (2010b), *OECD Regional Development Policies in OECD Countries* – Annex C, "Urban-Rural Linkages: In View of Controlling Urban Sprawl", OECD Publishing, Paris.

Page, I. (2009), "Residential Construction and Costs", Paper for CHRANZ Housing Workshop *After the Boom – Where to From Here?*, 9 July .

Poterba, J. (1992), "Taxation and Housing: Old Questions, New Answers", *American Economic Review,* 82, 237-42.

Quddus, M.A., M.G.H. Bell, J.D. Schmocker and A. Fonzone (2007), "The Impact of the Congestion Charge on the Retail Business in London: An Econometric Analysis", *Transport Policy*, 14, 433-44.

Scanlon, K. and C. Whitehead (2004), "International Trends in Housing Tenure and Mortgage Finance", *Council of Mortgage Lenders*.

Scobie, G., T. Le and J. Gibson (2007), "Housing in the Household Portfolio and Implications for Retirement Saving: Some Initial Finding from SOFIE", *New Zealand Treasury Working* Paper 07/04.

SOLUTIONS (2009), *Sustainability Of Land Use and Transport In Outer NeighbourhoodS*, Final Report.

Sun, W., R.K. Triest and A. Webb (2007), "Optimal Retirement Asset Decumulation Strategies: The Impact of Housing Wealth", *Federal Reserve Bank of Boston Public Policy Discussion Papers* No. 07-2.

Suntum, U. (van) (2009), "Housing, Taxation and Retirement Income", *Journal of Housing Economics*, 18, 249-55.

Tanzi, V. and H.H. Zee (1998), "Taxation and the Household Saving Rate: Evidence from OECD Countries", *IMF Working Paper* 98/36.

TWG (2010), "A Tax System for New Zealand's Future", Report of the Victoria University of Wellington Tax Working Group, January.

Tumbarello, P. and S. Wang (2010), "What Drives House Prices in Australia? A Cross-Country Approach", *IMF Working Paper* 10/291.

Yates, J. (2000), "Is Australia's Home-Ownership Rate Really Stable? An Examination of Change Between 1975 and 1994", *Urban Studies*, 37, 319-42.

ANNEX 2.A1

Housing-related taxation: Interest deductibility, imputed rent and capital gains tax

Table 2.A1.1. **Housing-related taxation: Interest deductibility, imputed rent and capital gains tax**

	Mortgage interest deductibility	Inheritance/Estate tax	Tax on imputed rents	Capital gains tax (CGT)		
				Primary residence	Other residence	Other assets
Australia	No	No	No	No	Yes, on 50% of the capital gain at marginal tax rate if held for 1 year or more. Otherwise taxed on full capital gain.	Taxed on 50% of gains at marginal tax rate if held for 1 year or more. Otherwise taxed on full capital gain.
Austria	Yes	No	No	Taxed at marginal tax rate, exempt after 2 years holding.	Taxed at marginal income tax rate, exempt after 10 years holding.	Taxed on speculative gains at half of marginal income tax rate, otherwise exempt.
Belgium	Yes	Yes	Subject to immovable with holding tax but not to income tax.	No	Taxed at 16.5% if held less than 5 years, exempt after 5 years holding. Taxed at 33% on speculative gains.	Taxed on speculative gains at 33% rate, otherwise exempt.
Canada	No	No	No	No	Taxed on 50% of the capital gain at marginal income tax rate.	Taxed on 50% of gains at marginal income tax rate.
Czech Republic	Yes	Yes	No	Taxed at 15% rate, exempt after 2 years holding or if proceeds reinvested in another residence.	Taxed at 15%, exempt after 5 years holding.	Taxed at 15% flat rate.
Denmark	Yes	Yes	No	No	Taxable as capital income	Taxed at 28% rate below DKK 48 300 and 42% otherwise.
Estonia	Yes		No	Exempt.	Exempt if held more than 2 years.	Taxed at 2% flat rate.
Finland	Yes	Yes	No	Taxed at flat rate of 28%, exempt after 2 years holding.	Taxed at 28% flat rate.	Taxed at 28% flat rate.
France	No from 2011	Yes	No	No	Taxed at 16% flat rate, exempt after 15 years holding.	Taxed at flat rate of 18%.
Germany	No	Yes	No	From 2010: Taxed at income tax rate, exempt after 10 years holding.	From 2010: Taxed at marginal income tax rate, exempt after 10 years holding.	From 2010: Taxed at marginal income tax rate, exempt after 1 year holding.
Greece	Yes	Yes	Yes on principal dwellings larger than of 200 m^2 and on second house larger than 150 m^2.	No	From 2010: Taxed at 5-20% rate.	From 2010: Taxed at 10% flat rate.
Hungary	No	Yes	No	Taxed at 25% flat rate, exempt after 5 years holding.	Taxed at 25% flat rate, exempt after 5 years holding.	Taxed at 25% flat rate.
Iceland	Yes	Yes	Yes, 70% of rent taxed at 15%.	Taxed at 18% rate, exempt after 2 years holding or if proceeds reinvested in another residence.	From 2010: Taxed at 18% rate.	From 2010: Taxed at 18% rate.
Ireland	Yes	Yes	No	Exempt, but the increases in value due to improvements are taxable.	From April 2009: Taxed at 25% rate.	From April 2009: Taxed at 25% rate. First EUR 1 270 of gains exempt.
Israel	No	–	No	No	–	Taxed at 20%. For significant shareholders taxed at 25%.
Italy	Yes	Yes	Exempt for principal dwellings.	No	Taxed at either flat rate of 20% or marginal income tax rate, exempt after 5 years holding.	Taxed on 49.72% of gains at marginal income tax rate.

Table 2.A1.1. **Housing-related taxation: Interest deductibility, imputed rent and capital gains tax** *(cont.)*

	Mortgage interest deductibility	Inheritance/ Estate tax	Tax on imputed rents	Capital gains tax (CGT)		
				Primary residence	Other residence	Other assets
Japan	No	Yes	No	Taxed at 30% rate up to 5 years holding, and at 15% rate after 5 years holding.	Taxed at 20% after 5 years holding, otherwise taxed at 39%.	Taxed at 15% rate.
Korea	No	Yes	No	Taxed at 6-35%, exempt after 3 years holding.	Taxed at 6-35% rate depending on the amount.	Taxed at 6-35% rate.
Luxembourg	Yes	Yes	Yes. Imputed rent at 4-6% of unit value of the dwelling based on valuation on 1 January 1941.	Taxed at marginal income tax rate, exempt after 2 years holding.	Taxed at maximum rate of 19.475%, or at marginal income tax rate for less than 5 years holding.	Taxed at maximum rate of 19.475%, or at marginal income tax rate for less than 6 months holding.
Mexico	No	No	–	Taxed at marginal tax rates up to 2 years holding, exempt otherwise.	Taxed at marginal tax rates.	Exempt for securities classified as available to the public.
Netherlands	Yes	Yes	Yes. Imputed rent of up to 0.55% of market value of the dwelling.	No	No	No
New Zealand	No	No	No	No	No	No
Norway	Yes	Yes	No	Exempt if the owner has occupied the house in 12 out of the last 24 months.	Taxed at 28% rate.	Taxed at 28% rate.
Poland	No	Yes	Yes. Taxed according to a progressive scale or taxed by lump sum at 8.5% + 20% of excess over EUR 4 000.	Taxed at 19% rate, exempt after 5 years holding or within 2 years if proceeds reinvested in another principal dwelling or to pay mortgage loan.	Taxed at 19% flat rate, exempt after 5 years holding.	Taxed at 19% flat rate.
Portugal	Yes	No	No	Taxed on 50% of gains at marginal income tax rate, exempt if proceeds reinvested in another principal residence within 2 years.	Taxed on 50% of gains at marginal income tax rate.	Taxed at 10% rate or at marginal income tax rate.
Slovak Republic	No	No	No	Taxed at 19% rate, exempt after 2 years holding.	Taxed at 19% rate, exempt after 5 years holding.	Taxed at 19% rate, exempt up to a ceiling.
Slovenia	No	–	Yes	Exempt after 3 years holding period.	–	
Spain	Yes	Yes	No, on principal dwellings.	Exempt if reinvested in another principal residence or for Individuals over age 65.	Taxed at marginal income tax rate.	Taxed at marginal income tax rate.
Sweden	Yes	No	No	Taxed at 22% rate, but may be deferred if reinvested in principal residence.	Taxed on 22/30th of gains at 30% flat rate.	Taxed at 30% flat rate.
Switzerland	Yes	Yes	Yes	Yes	Yes	Yes
Turkey	No	Yes	Yes	Exempt	Taxed at marginal income tax rate, exempt after 5 years holding.	Taxed at marginal income tax rate, exempt for shares in resident companies held for 3-12 months.
United Kingdom	No	Yes	No	Exempt	From 2008/09: Taxed at 18% rate.	From 2008/09: Taxed at 18% rate.
United States	Yes	Yes	No	First USD 250 K (USD 500 K if married) excluded if dwelling occupied 2 years over 5 year period.	Yes	Yes

Source: OECD Housing Market Questionnaire, *European Tax Handbook* (2009), *The International Comparative Legal Guide to Real Estate* 2010.

Chapter 3

How to move product market regulation back towards the frontier

From the mid-1980s, New Zealand was widely considered to be a leader in liberalising product market regulation (PMR). However, the reform of PMR has lost momentum over recent years. Many areas of PMR are still consistent with best practice, but New Zealand is no longer assessed to be at the forefront of regulatory policy making. Although economic geography clearly offers a partial explanation for the relative underperformance of the NZ economy, restrictive policies in some areas are also likely to be constraining growth in GDP per capita. Indeed, it is likely that being small and distant exacerbates the negative impact of restrictive product market policies on New Zealand's economic performance. This implies a genuine need to shift the regulatory framework back towards the OECD frontier. Ongoing improvements in regulatory governance, minimising the government's influence in competitive markets and lowering barriers to trade and FDI, including ongoing policy harmonisation and mutual recognition with trading partners where appropriate, would all help in this regard.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

This chapter asks whether New Zealand's regulatory framework is making the best possible contribution to economic growth. Over the last 25 years, GDP per capita growth rates have been insufficient to close the gap with other OECD countries, particularly Australia. Real business investment has been relatively modest in international comparison, and the efficiency with which productive resources are combined to produce output has underperformed. Although many regulatory areas are consistent with OECD best practice, persistently low productivity and GDP per capita suggest that policy and institutional settings could be doing more to enhance New Zealand's economic performance.

Having the most unhelpful economic geography of any OECD country is one important reason for New Zealand's poor long-run economic performance. Although empirical work on New Zealand's industrial structure is sparse, it is likely that its product markets are relatively concentrated and that a large proportion of firms produce at less than minimum efficient scale. These twin disadvantages arise largely as a result of a relatively small domestic economy and geographic isolation that reduces the effective size of international markets.[1] In an age when scale economies are increasingly important and agglomeration is a key driver of productivity growth, these features of the NZ economy entail significant economic cost.

But economic geography is by no means the whole story. The OECD Indicators of Product Market Regulation (PMR), which are used as a basis for discussion throughout this chapter, show that product market reform has lost momentum in New Zealand, while most other OECD countries have continued improving their regulatory environments.[2] As a result, New Zealand is no longer at the forefront of regulatory policymaking but is about average in the OECD. Its regulatory regime also suffers from a certain degree of uncertainty and inconsistency in the extent to which competitive forces are able to operate across different policy domains. The regulatory framework has also diverged to some extent from those of major trading partners, implying mounting fixed costs for domestic firms wishing to expand into offshore markets and for multinationals wishing to operate in New Zealand. These types of regulatory barriers to competition exacerbate the impact of geographic isolation on New Zealand's "smallness" and are consequently more harmful than they might be in larger and better connected economies.

Given New Zealand's exogenous disadvantages, the regulatory environment needs to be highly conducive to new entry and competition to help mitigate the impact of economic geography on performance. If the threat of competition is credible, incumbent firms will perceive that pricing above competitive levels will attract entry and therefore refrain from anti-competitive behaviour and work to improve productivity so as to minimise costs and enhance profitability. The number of competitors is only one determinant of market performance, and the regulatory environment needs to ensure that other determinants – such as barriers to entry – are highly supportive of productivity growth. In addition, with large companies necessarily dependent on exports, the regulatory framework also needs to emphasise the minimisation of barriers to international trade and investment.

Ongoing improvements in regulatory governance to enhance the government's capacity to consistently produce high-quality regulation and an accelerated programme of reforms are needed if New Zealand is to begin the process of closing the productivity and income gaps with more advanced OECD economies. Regulatory improvements that stimulate competition and thereby improve economic efficiency can hasten catch up towards the world production possibilities frontier. As such, the government's current focus on "better regulation" as one of its six drivers of an enhanced economic performance is welcome and needs to be deepened and broadened.

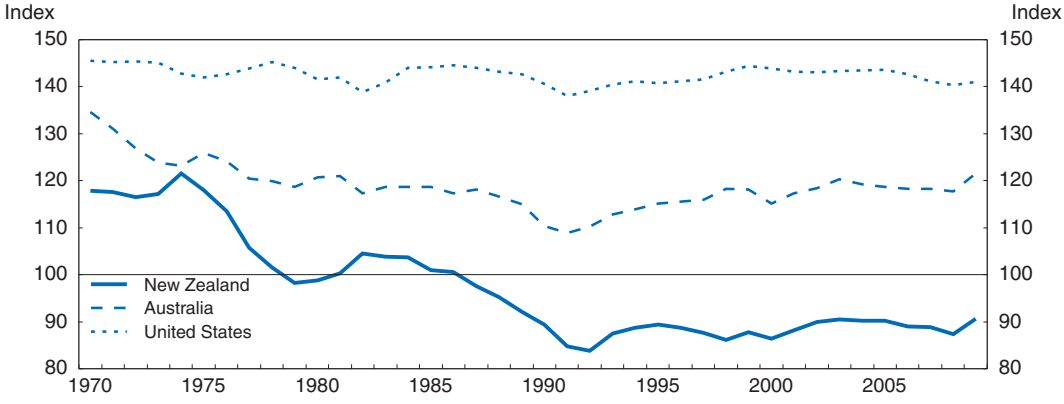
As well as highlighting the need for an exceptionally good regulatory environment, New Zealand's economic geography also implies a number of nuances in regulatory enforcement. All else equal, effectively regulating a small and remote economy is relatively difficult and requires more subjective judgements than in larger economies where competition is likely to be more robust for a given regulatory stance. As such, New Zealand's regulatory institutions must be well resourced and staffed by highly skilled individuals with detailed industry knowledge. Also, given the goal of a trans-Tasman Single Economic Market, ongoing improvements in regulatory harmonisation, mutual recognition and institutional co-operation between New Zealand and Australia would improve competitiveness by lowering spatial transactions costs as well as allowing for greater economies of scale in carrying out increasingly complex regulatory functions.

New Zealand's long-run productivity performance continues to disappoint

Living standards in New Zealand, as measured by GDP per capita, have been well below the OECD average since the late 1980s (Figure 3.1). In 2008, New Zealand's GDP per capita ranked 23rd in the OECD and about 50% below that of the United States, 30% below that of Australia and 13% below the OECD average. This has not always been the case – in the first half of the 1970s, New Zealand's real GDP per capita was only 18% lower than in the United States, approximately equal to Australia's and about 15% above the OECD average.

Figure 3.1. **Real GDP per person**[1]

OECD = 100, at constant 2000 purchasing power parities and constant prices



1. GDP per capita has been calculated in USD at constant prices and constant PPPs.

Source: OECD *National Accounts Database*.

StatLink http://dx.doi.org/10.1787/888932399791

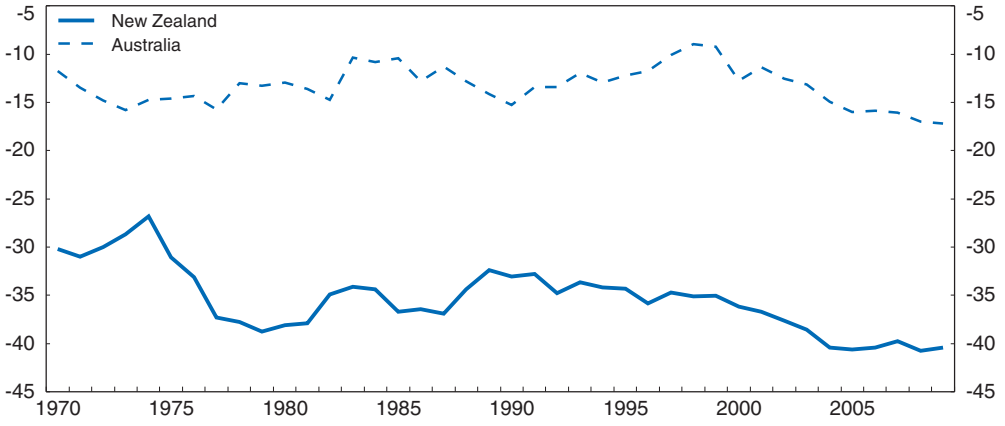
Virtually the entire decline in New Zealand's GDP per capita relative to the OECD average occurred from the mid-1970s to the late 1980s. In large part, this reflected

the negative impact of extremely restrictive regulatory settings that reduced New Zealand's economic resilience in the face of changing circumstances. In particular, dramatic terms-of -trade shocks over this period, coupled with generally unsustainable monetary and fiscal policies, had a severe negative impact on New Zealand's economic performance. From the early 1990s, reflecting the beneficial effects of economic reforms in the late 1980s to early 1990s, New Zealand's economic performance improved and GDP per capita has since broadly stabilised *vis-à-vis* the OECD average. However, the gap in living standards relative to Australia has continued to widen, reflecting an above-average growth performance in New Zealand's trans-Tasman neighbour.

Comparatively low GDP per capita in New Zealand overwhelmingly reflects poor performance in labour productivity, which has suffered a long slow decline *vis-à-vis* the United States and the OECD average for a number of decades (Figures 3.2 and 3.3). In 2008, hourly labour productivity is estimated to have been in the lower third of OECD countries and broadly comparable to that in Greece (prior to the sovereign debt crisis) and the Slovak Republic. This equates to a labour productivity level that is 45% below that in the United States, 30% lower than in Australia and over 25% lower than in the average OECD country. In comparison, with relatively high employment and low unemployment, labour utilisation makes a positive contribution to New Zealand's gap in GDP per capita *vis-à-vis* other OECD countries.

Figure 3.2. **Gap in labour productivity *vis-à-vis* the United States**

At constant 2000 purchasing power parities; USA = 100



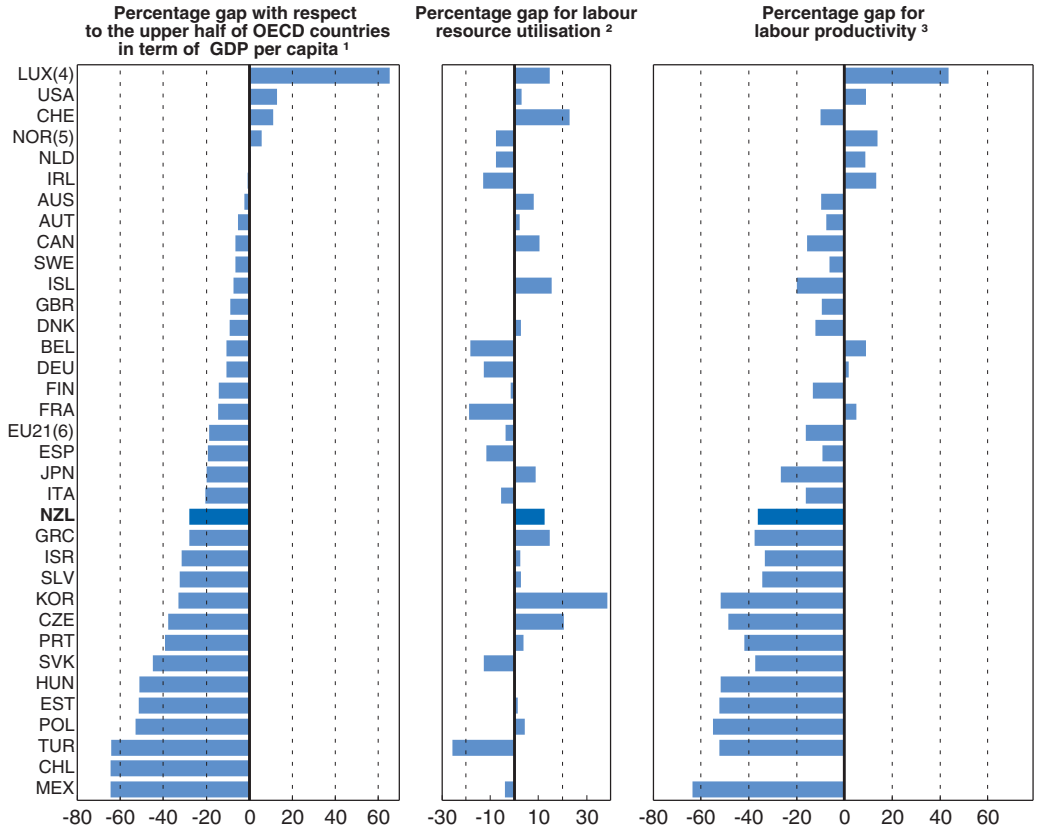
Source: OECD *National Accounts Database* and OECD.stat, *Productivity Database*.

StatLink http://dx.doi.org/10.1787/888932399810

Given data limitations, it is not entirely clear whether this persistently poor labour productivity performance predominantly reflects weak growth in investment or in multifactor productivity (MFP). At first glance, total investment as a share of GDP has tracked near or above the OECD median since 1990 (Figure 1.9, Panel A). Moreover, the share of ICT in total investment, a key driver of recent growth in a number of OECD countries, has been strong in international comparison (Figure 3.4). However, housing investment has been relatively robust over this period, and thus the GDP share of non-residential investment has typically been in the lower half of OECD countries (Figure 1.9, Panels C and D), consistent with a low level of capital intensity per worker (OECD, 2009a). A range of indicators – such as a pronounced slowdown in government investment around the beginning of the 1990s – suggest that infrastructure investment,

often found to have a disproportionately positive impact on economic performance, has also been low in New Zealand.[3] In addition, some older survey evidence suggests that the quality of New Zealand's infrastructure was generally considered to be relatively poor (Grimes, 2003). In recent years, however, the government and local authorities have significantly increased infrastructure expenditure (New Zealand Government, 2010).

Figure 3.3. **The source of real income differences, 2009**



Note: The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

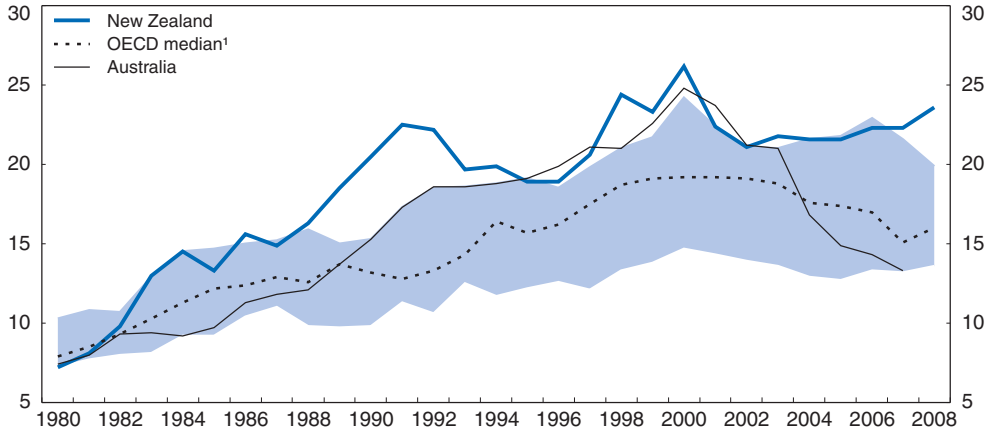
1. Relative to the simple average of the 17 highest OECD countries in terms of GDP per capita, based on 2009 PPPs.
2. Labour resource utilisation is measured as total number of hours worked divided by population.
3. Labour productivity is measured as GDP per hour worked.
4. For Luxembourg, the population is augmented by the number of cross-border workers.
5. Data refer to GDP mainland Norway which excludes petroleum production and shipping.
6. EU21 is EU15 plus Czech Republic, Estonia, Hungary, Poland, the Slovak Republic and Slovenia.

Source: OECD (2011), *Economic Policy Reforms 2011: Going for Growth*, OECD Publishing.

StatLink http://dx.doi.org/10.1787/888932399829

As well as a questionable contribution from capital deepening, New Zealand's poor labour productivity performance also reflects slow growth in MFP. Although there is evidence of a structural improvement around 1993 (Black, Guy and McLellan, 2003), MFP growth has consistently been at the lower end of the range of outcomes of countries for which data are available (Figure 3.5). In particular, MFP growth in New Zealand did not experience the strong surge seen in Australia over the 1990s and in the United States more recently.

Figure 3.4. **ICT investment as a share of total economy non-residential investment**

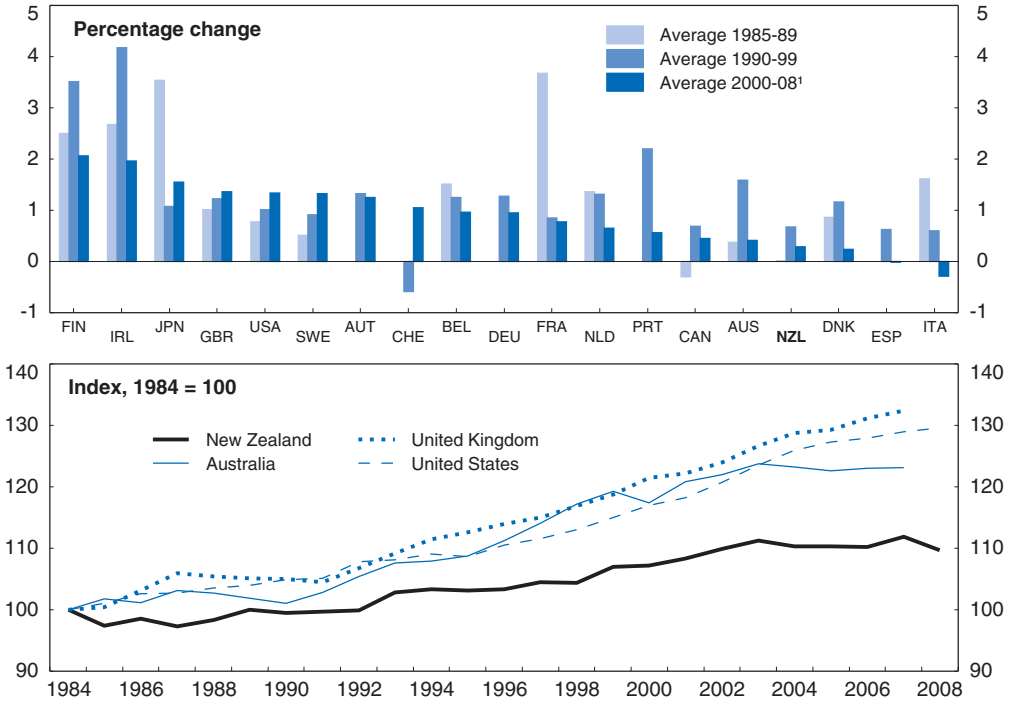


1. The shaded area is the 25th to 75th percentile range (covering half the countries) of 21 available OECD countries.

Source: OECD Factbook 2010.

StatLink http://dx.doi.org/10.1787/888932399848

Figure 3.5. **Multifactor productivity outcomes**



1. Or latest available year.

Source: OECD.stat, *Productivity Database*.

StatLink http://dx.doi.org/10.1787/888932399867

Other than communications and finance and insurance – two sectors that are likely to have benefited from high rates of ICT investment – and agriculture, forestry and fishing, this poor MFP growth performance is reasonably broadly based. Rapid labour productivity growth in the electricity, gas and water sector over the 1990s reflected high investment levels, while MFP growth was more subdued before turning negative after 2000 (Table 3.1).

Table 3.1. **Labour productivity, MFP and capital deepening by sector**

	Average labour productivity growth			Average MFP growth			Average rate of capital deepening		
	1980-89	1990-99	2000-08	1980-89	1990-99	2000-08	1980-89	1990-99	2000-08
Aggregate (measured sector)	**2.32**	**2.44**	**1.58**	**0.81**	**1.59**	**0.90**	**1.49**	**0.80**	**0.72**
Agriculture, forestry and fishing	6.44	4.15	1.58	5.60	2.79	1.70	0.81	1.31	0.88
Mining	4.10	6.41	–3.83	–0.28	3.11	–2.49	4.41	3.20	–1.36
Manufacturing	2.42	1.46	1.32	0.64	0.51	0.66	1.78	0.94	0.65
Electricity, gas and water supply	3.76	8.30	0.80	2.09	1.19	–1.73	1.64	7.01	2.57
Construction	1.91	–0.22	0.12	1.72	–1.15	–0.33	0.20	0.93	0.46
Wholesale trade	0.02	0.20	2.24	–1.40	0.55	1.75	1.45	0.93	0.46
Retail trade	1.08	1.10	3.04	–1.89	0.76	1.98	0.85	0.33	1.02
Accommodation, cafes and restaurants	–2.65	–1.34	–0.16	–2.94	–1.06	–0.96	0.29	–0.26	0.81
Transport and storage	3.96	5.80	0.77	4.20	5.76	0.13	–0.23	0.03	0.65
Communications services	7.28	13.45	7.79	2.85	6.95	6.10	4.32	6.07	1.77
Finance and insurance	1.18	4.93	3.98	–1.74	3.31	2.01	2.97	1.56	1.94

Source: Statistics New Zealand and OECD.

In the transport and storage sector, MFP growth also collapsed in the 2000s after a solid performance in the previous two decades. In the manufacturing sector, which makes the largest contribution to GDP growth (Warmke *et al.*, 2010), relatively mediocre labour productivity growth up until 2000 was driven by both MFP growth and capital deepening.

The regulatory framework needs to be top notch

New Zealand faces inherent disadvantages

New Zealand's small domestic market, coupled with its geographic remoteness, reduces the potential for exploiting scale economies and specialisation. This is apparent in some aspects of its firm demography. Although the proportion of small firms operating in New Zealand is not too far out of line with some other OECD countries, its largest firms are relatively small in international comparison (Mills and Timmins, 2004).[4] For example, only around one quarter of employment is in firms with 500+ employees, whereas over half of employment in the United States and the United Kingdom is in firms in this size class.

Notwithstanding difficulties inherent in identifying the impact of scale on productivity growth, New Zealand's firm demographics have been linked to significant diseconomies of scale (Arnold *et al.*, 2003). For example, the ratio of total economic cost to total revenue and the amount of capital per unit of output are both found to be markedly higher in New Zealand than in several other OECD countries.[5] This is particularly the case in the network sectors, given that New Zealand's small population limits the scope for network externalities, thereby increasing required capital intensity compared to larger countries. Using an index-number approach, Fox (2005) finds that returns to scale play a much larger role than technical progress in explaining New Zealand's productivity performance, also suggesting that a lack of scale may be restraining productivity growth.

As well as reducing the potential for scale effects, the small size of the NZ economy may also reduce the potential for competition to encourage improvements in firm performance. Very little work has been done on New Zealand's industrial structure. However, available evidence suggests that although competition may have increased as a result of economic reform, product markets still tend to be more concentrated than in some other OECD countries, despite the relative lack of large domestic firms (Ratnayake,

1999; Arnold *et al.*, 2003). There is also evidence that, as measured by value added, large firms do not perform particularly well in international comparison (Treasury, 2008b). Among other things, this suggests that competitive pressures may be limited in the markets in which they operate.

These key economic characteristics imply a tension between market concentration and firms' ability to produce at an optimum scale. International trade is the most obvious means of resolving this tension – imports increase effective competition in concentrated domestic markets, while exports allow national firms to exploit increasing returns to scale and specialisation without adversely affecting competition. However, in the case of New Zealand, which is the most remote economy in the OECD, relatively high spatial transaction costs act as a barrier and reduce the potential for trade to overcome the disadvantages of smallness. In addition, it is more difficult for potential exporters to develop an understanding of destination markets, given that they tend to be relatively small firms at an earlier stage of development than exporting firms based in larger economies.

The estimated economic impact of remoteness on the New Zealand economy is far from negligible. In a recent comprehensive study the OECD found that reduced market access relative to the OECD average cost as much as 10% of GDP per capita (Boulhol *et al.*, 2008). As has been found to be the case in Australia (Dolman *et al.*, 2007; Davis and Rahman, 2006), aspects of New Zealand's internal geography may also hamper economic performance. For example, its sparse population, small cities and long distances between urban centres may also constrain productivity growth by limiting competitive pressures and the opportunities for specialisation and scale (McCann, 2009).

Good policy can help New Zealand overcome its exogenous disadvantages

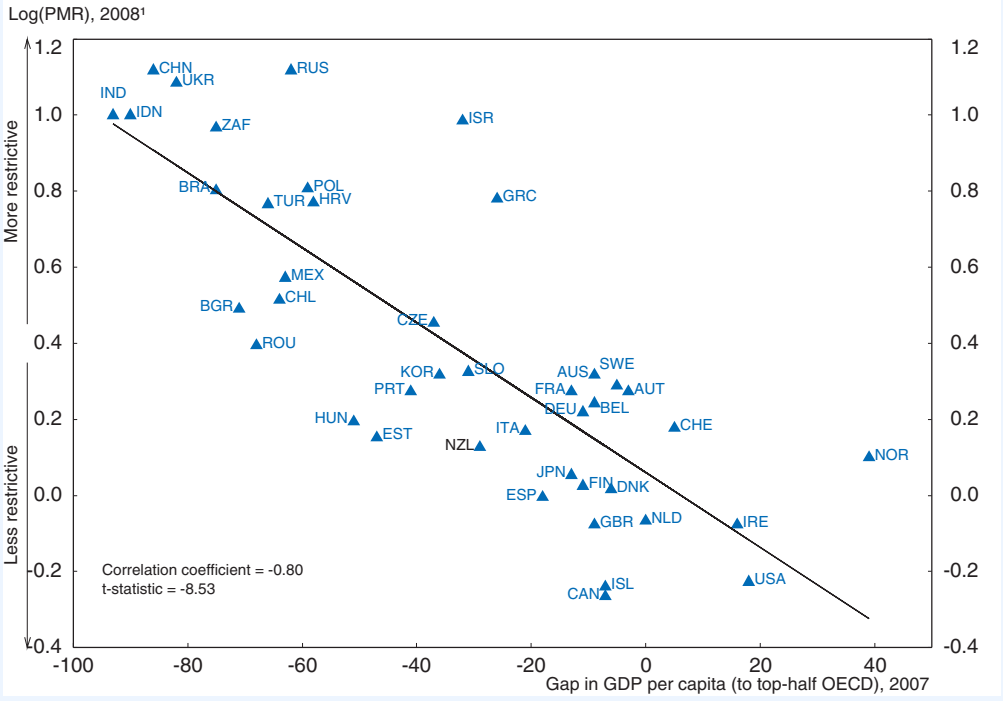
Although economic geography clearly plays a key role, it is by no means the only cause of New Zealand's mediocre long-run productivity performance. Australia provides a useful counter-example. Australia's economic geography also implies reduced access to world markets that is estimated to cost as much as in New Zealand – around 10% of GDP per capita (Boulhol *et al.*, 2008). Yet Australia has the eighth highest level of GDP per capita in the OECD, has been the OECD country least affected by the global recession and is one of the fastest growing developed economies in the world. Australia's larger domestic markets and cities imply greater scope for scale economies than in New Zealand, and it has benefited from a recent boom in natural resource exports. Yet, good policies and institutional settings are widely credited as being of key importance in driving its exceptional economic performance (*e.g.*, OECD, 2010a). Conversely, Mexico sits on the doorstep of the largest market in the OECD but performs poorly, reflecting regulatory settings that stifle competition, among other things (OECD, 2009b).

Although the synthesis of economic geography and regulatory economics is currently too little studied, it is apparent that good policies can mitigate some of the impact of unfavourable economic geography. The beneficial impact of liberal product market policies works through a number of different channels (Box 3.1). In general, regulatory settings that encourage competition have been found to spur technological diffusion and hasten catch up towards the productivity frontier (Conway *et al.*, 2006). From this perspective, New Zealand's large productivity gap suggests considerable "bang for the buck" from reforms *via* more rapid convergence. From an economic-geography perspective, regulatory improvements that foster competition have been found to increase trade and foreign direct investment (Nicoletti *et al.*, 2003), implying that good policy can counter-balance the

Box 3.1. **The cost of regulatory impediments to competition**

It is now well established that the extent to which regulation is conducive to competition has an important impact on economic performance. *prima facie* evidence suggests that regulations that encourage competition are consistent with higher average income across a range of developed and developing countries (Figure 3.6). A large number of recent theoretical and empirical papers generally confirm that the extent to which PMR supports competition has a significant impact on GDP per capita across countries.

Figure 3.6. **Product market regulation and GDP per capita**[1]



1. Based on a "simplified" PMR indicator. PMR measured in 1998 for OECD countries; 2008 for Brazil and China; 2007 for Croatia, Indonesia, South Africa and Ukraine; 2006 for Bulgaria, India and Romania.

Source: OECD.stat, *Market Regulation Database* and World Bank, *World Development Indicators*.

StatLink http://dx.doi.org/10.1787/888932399886

This significant link between PMR and economic performance may reflect a number of potential mechanisms. Broadly speaking, promoting competition by lowering (domestic and border) barriers to entry and levelling the playing field for different firm types encourages capital to move from low to high productivity firms and sectors, thereby improving resource allocation. The beneficial impact of reform may depend on the distance of given firms or sectors from the world technological frontier. For firms operating at the frontier, a competitive regulatory environment has been found to foster innovation-based productivity growth (Acemoglu *et al.*, 2005). For firms some distance behind the frontier, an increased entry threat from more productive firms may result in a "discouragement effect" that *reduces* innovation. At the sectoral and economy levels, however, the impact of increased competition on innovation and aggregate productivity is unambiguously positive as weaker incumbents shrink or close and more productive incumbents and new firms innovate (Aghion and Bessonova, 2006). This is particularly

Box 3.1. **The cost of regulatory impediments to competition** *(cont.)*

relevant to New Zealand where the sizeable productivity gap *vis-à-vis* high-income OECD countries implies considerable scope for technological catch up.

Enhanced product market competition can also contribute to GDP per capita growth by increasing employment (Blanchard and Giavazzi, 2003; Haefke and Edell, 2004; Nicoletti and Scarpetta, 2005). This can occur through a number of different mechanisms including new firm entry and changes in real wages (Blanchard and Giavazzi, 2003; Nicoletti and Scarpetta, 2005; Bassanini and Duval, 2006). However, employment in some large firms, particularly in the network sectors, where previous regulations were conducive to over-manning, may be adversely affected by deregulation. In addition, although the effects of product market reform on capital formation are ambiguous in theory, empirical studies have found that regulatory reforms, especially those that liberalise entry, are likely to spur fixed investment in some industries (Alesina *et al.*, 2005).

negative impact of size and distance. In a direct test of the interaction between product market policies and the forces of economic geography, Nordås and Kox (2009) estimate a gravity model across 25 OECD countries (including New Zealand) and find that liberal regulatory settings and greater policy harmonisation across countries mitigate the impact of distance on trade and FDI. Conversely, these authors also find that overly strict regulation in some sectors amplifies the disadvantages of remoteness. With scale economies and agglomeration effects becoming increasingly important in the current era of globalisation, it is likely that poor regulatory settings have a more harmful impact on the economic performance of small and distant countries such as New Zealand.

The NZ government is well aware of the need for an outstanding regulatory system to overcome the economic costs of size and distance and has made improving the quality of regulation a priority. Although it is unlikely that potential regulatory improvements will be able to fully offset the impact of New Zealand's economic geography, economic theory and experience suggest that they can make a considerable difference. As well as emphasising the importance of ongoing improvements in regulatory institutions and governance, New Zealand's economic geography also implies a number of important nuances in the design and enforcement of product market policies, discussed in more detail below.

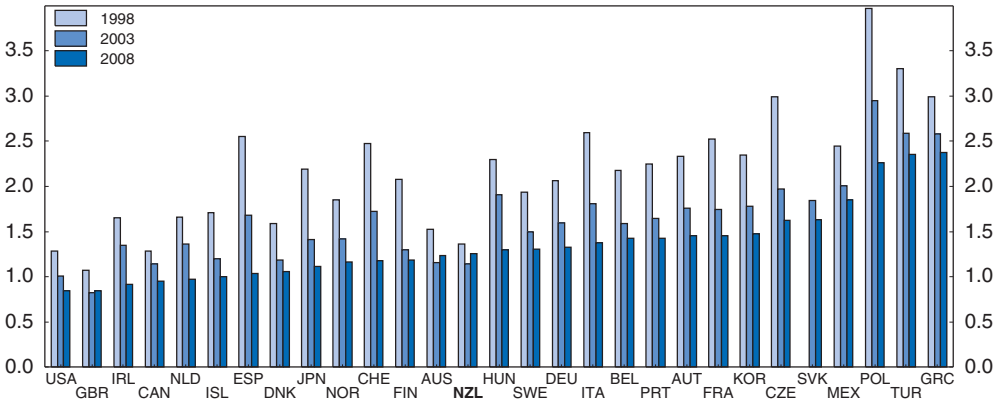
New Zealand's regulatory advantage has been eroded away

Up until the mid-1980s, the New Zealand economy was characterised by extensive regulatory controls and heavy involvement of local and central government enterprises across a broad range of sectors. The government controlled a large portion of economic activity through regulation and state ownership, often under the protection of statutory monopolies. That all changed from the mid-1980s when dissatisfaction with the systematic underperformance of the economy prompted the government of the time to embark on a period of comprehensive economic reform.[6] A raft of changes was introduced to reduce the government's influence in the business sector and strengthen the role of market competition in resource allocation and price determination.

By the end of the 1990s, New Zealand was considered to be a leader in implementing far reaching liberalisation across the economy. According to the PMR indicators, New Zealand at this time was one of a small group of countries in which regulatory restrictions on

competition were significantly lower than average across OECD countries (Figure 3.7). From the late 1990s to 2003, the regulatory environment was further improved at a rate slightly below that in other well regulated OECD countries, but New Zealand broadly maintained its high ranking.

Figure 3.7. **Economy-wide product market regulation, 1998-2008**[1]



1. Index scale of 0-6 from least to most restrictive.

Source: OECD, OECD.stat, *Market Regulation Database*.

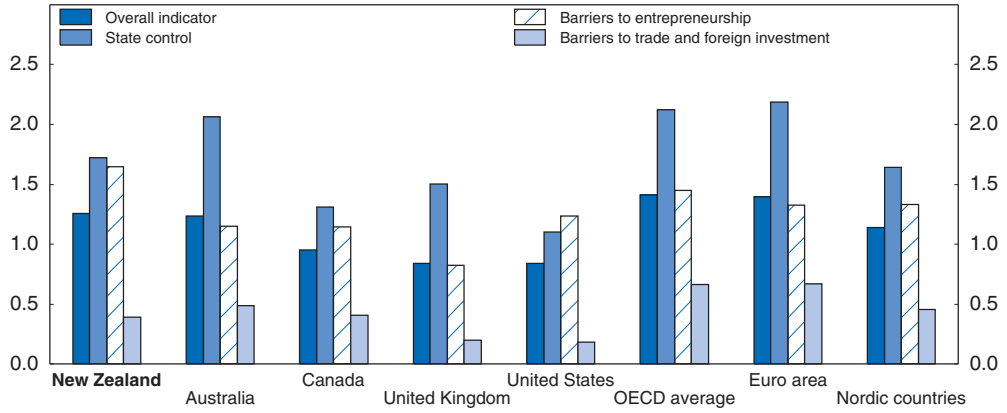
StatLink http://dx.doi.org/10.1787/888932399905

In more recent years, the intensity of New Zealand's reform effort has fallen and, as detailed below, some policy changes have made the regulatory environment slightly *less* conducive to competition. This may reflect a surprisingly prolonged period of "reform fatigue" after the sometimes tumultuous reforms of the late 1980s and early 1990s and a view that those reforms should have been sufficient to move New Zealand's regulatory structure to some ideal state. However, the OECD experience over the last couple of decades has been that effective regulatory management is a dynamic process, as opposed to a one-off set of interventions, implying an ongoing need for reform (Malyshev, 2006). At the same time, most other OECD countries have continued reforming, with the net effect that New Zealand is no longer at the forefront of product market regulation but, instead, around average (Figure 3.8).[7]

New Zealand's approach to competition lacks consistency

As well as having a regulatory environment around average in the OECD in terms of fostering competition, New Zealand's regime is also characterised by a significant degree of inconsistency in the extent to which policy settings are supportive of competition. By way of example, although tariffs are among the lowest in the world, barriers to FDI are assessed to be relatively restrictive in international comparison. As a general measure of policy inconsistency economy wide, the variance of New Zealand's low-level PMR indicators has recently moved up from 1.35 to 2.25, fourth highest in the OECD and well above the mean value of 1.72 (Table 3.2). Across the network sectors, differences in the extent to which policy settings encourage competition in New Zealand are the highest in the OECD, and much higher than would be expected given the overall stance of regulation (Figure 3.9, Panel A).[8] This implies that New Zealand's regulatory framework does not "hang together" as well as it could in that there are marked differences in the extent to which policies in

Figure 3.8. **The overall PMR indicator and main sub-indicators,[1] 2008**



1. Index scale of 0-6 from least to most restrictive.

Source: OECD, OECD.stat, *Market Regulation Database*.

StatLink http://dx.doi.org/10.1787/888932399924

Table 3.2. **Within-country variance of low-level PMR indicators, 1998 to 2008**

	Australia	Austria	Belgium	Canada	Czech Republic	Denmark	Finland	France	Germany	Greece
1998	1.15	2.90	2.87	0.78	2.29	2.17	1.83	2.83	1.69	3.20
2003	1.30	2.51	1.80	1.00	1.70	1.37	1.46	2.05	1.29	2.35
2008	1.45	1.80	1.55	1.21	1.46	1.06	1.36	2.02	1.61	2.16

	Hungary	Iceland	Ireland	Italy	Japan	Korea	Luxembourg	Mexico	Netherlands	New Zealand
1998	2.84	1.88	2.94	4.01	2.78	2.49	–	1.87	1.40	1.40
2003	2.22	2.12	2.26	2.03	1.86	1.22	1.92	2.69	1.19	1.35
2008	1.43	2.02	1.54	1.85	1.35	1.37	1.59	3.32	0.88	2.25

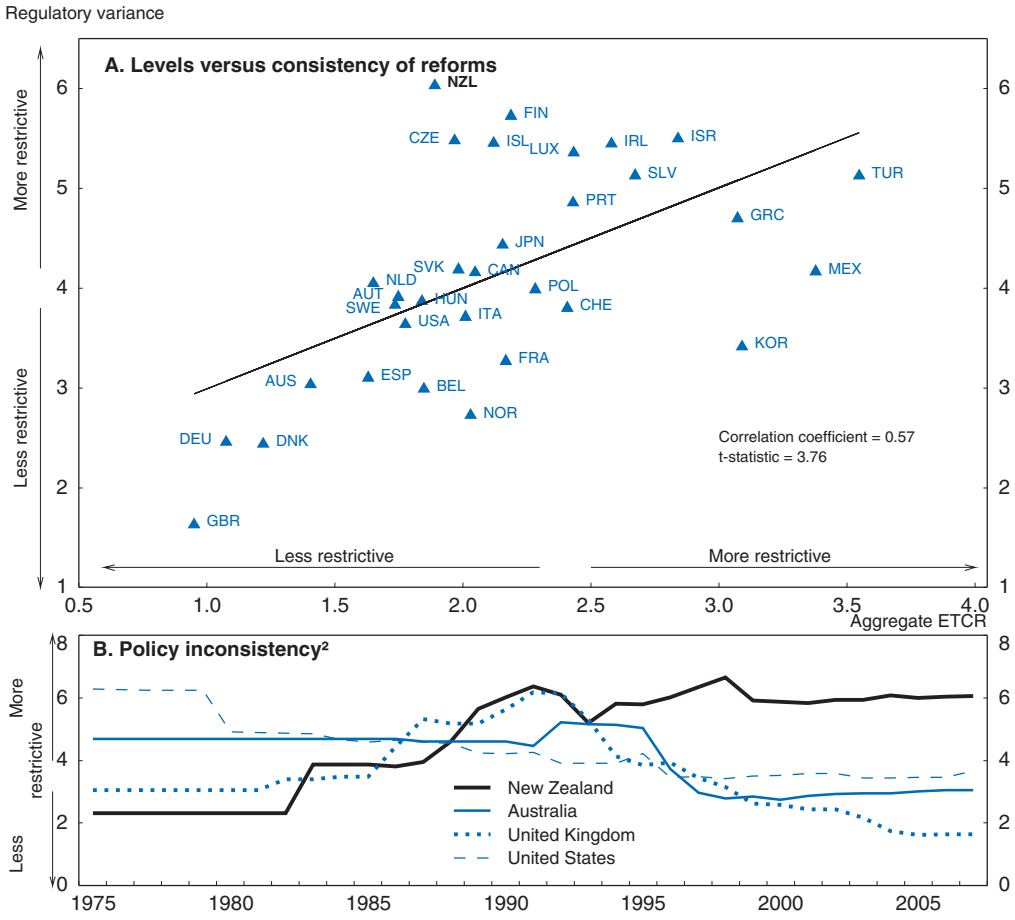
	Norway	Poland	Portugal	Slovak Republic	Spain	Sweden	Switzerland	Turkey	United Kingdom	United States
1998	2.17	2.70	1.95	n.a.	1.98	2.67	2.78	2.38	1.26	1.79
2003	1.86	3.51	1.70	1.57	2.06	1.77	2.68	3.65	0.67	1.19
2008	1.59	3.94	1.92	1.06	1.42	1.87	1.52	2.95	0.88	1.12

Source: *OECD PMR Database* and OECD calculations.

different areas support competition. Although many aspects of the regulatory framework are conducive to competition, barriers exist across a range of other areas, including accident insurance, the dairy industry, kiwifruit exporting and pharmacy ownership.

While most other OECD countries have been focusing reform efforts on problem areas and thereby improving the coherence of their regulatory frameworks with respect to encouraging competition, policy inconsistency has been escalating in New Zealand. For example, while barriers to entry in network sectors have been reduced in virtually all OECD countries, New Zealand has concurrently increased the extent of public ownership in some of its network sectors. Although policy inconsistency typically increases at the beginning of reform programmes, this should subsequently reverse as reforms become entrenched and applied more uniformly across the board. In contrast to a number of comparator countries, this period of regulatory consolidation has yet to occur in New Zealand, indicating an unfinished reform agenda (Figure 3.9, Panel B). Given

Figure 3.9. **The regulation of network sectors**[1]



1. Regulation on Energy, transport and communication.
2. Policy inconsistency is measured as the standard deviation of the low-level indicators used in the OECD's indicators of regulation in the energy, transport and communications sectors. See Conway and Nicoletti (2006) for details on this indicator.

Source: OECD.stat, *Market Regulation Database* and OECD calculations.

StatLink http://dx.doi.org/10.1787/888932399943

complementarities across different policy domains, this implies a danger that the potential benefits of product market reforms in some areas may be reduced in view of ongoing and increasing restrictions in others.

Policies to improve product market regulation

This section takes a more detailed look at product market regulation in New Zealand. It begins with the network sectors before moving on to discuss regulatory settings under the three broad categories captured by the PMR indicators – that is, *barriers to entrepreneurship*, *state control* and *barriers to trade and investment*. Each of these four sub-sections first outlines New Zealand's relative performance in that regulatory domain and then examines problem areas in more detail and proposes regulatory refinements that

would improve the business environment by enhancing the role of competition with the aim of increasing economic efficiency.

The network sectors

The network sectors (*i.e.* electricity, gas, water, transport and communications) account for a significant and increasingly important share of New Zealand's economic activity, around 13% of GDP (Warmke, 2010). Although an up-to-date input-output table does not currently exist, network sectors also presumably account for a large share of intermediate inputs, as in other OECD countries. As such, network-sector regulation not only impacts the performance of these sectors but also has a less visible effect on firms that use the output of network sectors as intermediate inputs in the production process (Conway *et al.*, 2006; Bourlès *et al.*, 2010).[9]

Reflecting their economic significance and challenges around natural monopolies, the network sectors have undergone significant reform in New Zealand. Prior to the start of reforms in the mid-1980s, the network sectors were typically operated by vertically integrated state-owned monopolies. However, New Zealand was very much an early mover in network-sector reform and by the late 1990s was at the forefront of network regulation in the OECD. The broad thrust of reform over this period focused on separating potentially competitive functions from natural monopolies and removing legal barriers to entry. Pricing and other terms of network access were determined under a light-handed regulatory framework that rested on generic competition law, information disclosure and the threat of government intervention – in the form of price controls – in the event of anti-competitive behaviour.

Over the 1990s, the ability of New Zealand's light-handed regulatory framework to exert sufficient pressure on incumbents to offer network access to new entrants on reasonable terms was increasingly called into question. At the same time, the courts generally refused to assume the role of sector regulator and resolve access and pricing disputes, undermining the suitability of the Commerce Act as a quasi-regulatory system. In addition, as the reform of network sectors gathered pace in other OECD countries, New Zealand's light-handed approach began to look increasingly atypical.

These concerns prompted policymakers to embark on a period of re-regulation in some of the network sectors from the late 1990s. Independent regulators were introduced in a number of sectors in an effort to shield market participants from interference by political and private interests and improve regulatory efficiency. Although some of the changes introduced during this period of re-regulation are consistent with OECD best practice, other aspects of network-sector regulation, particularly state involvement and the reacquisition of significant ownership interests in the case of rail and airline networks, have been discouraging of competition. At the same time, other OECD countries have made significant progress in this domain, and New Zealand's regulatory framework in network sectors is currently assessed to be around average and significantly less conducive to competition than in comparator countries such as Australia and the United Kingdom (Figure 3.9).

Network sector regulation needs to settle in and continue improving at the margin

In some of New Zealand's network sectors – for example, telecommunications and energy markets – aspects of the regulatory framework are still relatively new. As such, their ability to mimic the impact of competition on the efficiency and pricing of network-sector firms will develop over time as both regulators and firms gain experience.[10] For example,

in 2008 provisions were introduced into the Commerce Act to promote outcomes consistent with competitive markets in network sectors in which there was little competition. Effectively implementing these provisions calls for the use of international benchmarks as well as a top-down approach in which indicators of competition and market efficiency are used to assess performance. These new provisions of the Commerce Act also require the Commerce Commission to specify "input methodologies" outlining the rules, processes, requirements and evaluation criteria that are applied in implementing various regulatory instruments in the airport services, electricity transmission and distribution, and gas pipeline sectors. Successfully implementing these input methodologies would promote regulatory certainty, which is needed in some of New Zealand's network sectors.

Regulatory certainty, and network sector performance more generally, could also be improved by clarifying the respective roles and responsibilities of the departments and ministries that set policies and the regulators that implement and enforce them. In the interests of clarity, it is imperative that regulators maintain political neutrality and that the executive branch of government does not get involved in regulatory operations. These lines of responsibilities can be blurred in New Zealand, which can undermine the authority of regulators and increase market uncertainty, instability and investor risk premiums. For example, in the electricity sector, changes in institutional responsibilities have recently been made to strengthen regulatory independence and discourage market participants, particularly state owned enterprises, from seeking ministerial intervention to achieve particular market outcomes (Electricity Technical Advisory Group, 2009).

This same exercise needs to be broadened across some of the other network sectors. In transport, a provision in the Civil Aviation Act means that the Minister of Transport, on the advice of the Ministry of Transport, decides on any international aviation alliances that fall short of a merger under the Commerce Act.[11] However, the Ministry of Transport does not have the necessary expertise and is not authorised to share information with competition regulators in other jurisdictions, unlike the Commerce Commission, which will soon have the power to share information and co-operate with foreign regulators. In addition, with the NZ government a majority shareholder in Air New Zealand, the current arrangement reduces the distinction between the government's roles as policymaker, regulator and owner. As such, the Minister of Transport's special powers over restraints on competition in international air carriage and international ocean shipping need to be revoked. By way of another example, in the telecoms sector, the respective roles of the Minister and regulator in making decisions under the Telecommunications Act and Part IV of the Commerce Act is often criticised as being unclear.

Of course, independent regulators should be accountable. Their performance should be evaluated periodically to assess their impact on the markets they regulate, their capacity to strike a balance between multiple and possibly conflicting goals, the quality of their regulatory output and their respect of established accountability standards. Regulatory decisions should also be more consistently open to merits reviews, which would also help ensure robust processes and high-quality decision making, though they should not be allowed to stifle pro-competitive initiatives. In contrast to merits review, judicial review is widely available in New Zealand.

Government interventions in network sectors need to be more transparent

In the telecoms sector, the government has committed up to NZD 1.5 billion to provide ultra-fast broadband via fibre optic cable accessible to 75% of New Zealanders within the

next 10 years (New Zealand Government, 2010). While the private sector is expected to at least match NZ government contributions to the ultra-fast broadband initiative (UFB), such a large public investment should be made on the basis of a rigorous business plan. Instead, the UFB has effectively circumvented the regulatory governance process and has not been subject to a Regulatory Impact Assessment. Hence, the economic justification for the government's investment remains unexplored. In addition, in an effort to promote retail competition, Telecom's participation in the UFB is contingent on full ownership separation of its network division. However, much of the regulatory regime for telecoms is designed around a vertically integrated incumbent provider, implying significant regulatory uncertainty going forward. While regulatory safeguards will continue to be necessary for wholesale UFB operators, who are likely to have significant monopoly power, the separation of retail services should enable a considerable lightening or removal of retail regulation.

The "Kiwi Share", which is a single "golden share" retained in Telecom by the government, is a long-running issue in the telecoms sector that has an important influence on firm behaviour and market outcomes. It is used to impose foreign-ownership restrictions, coverage obligations, price caps for certain residential services and a "free local calling" rental option. It therefore imposes significant constraints on Telecom and distorts competition in the telecoms market (Howell, 2008). Coverage obligations, which have been subsumed into the Telecommunications Service Obligation, should be made contestable by other potential entrants and open to a range of technologies. Concerns about price increases for some residential services should be dealt with by industry-specific regulation enforced by the regulator, while concerns about foreign ownership should be dealt with under New Zealand's foreign direct investment regime. Finally, "free local calling" simply distorts residential fixed-line pricing by pushing up the price of rentals in calling packages that do not suit many households. Overall, the Kiwi Share should be abolished.

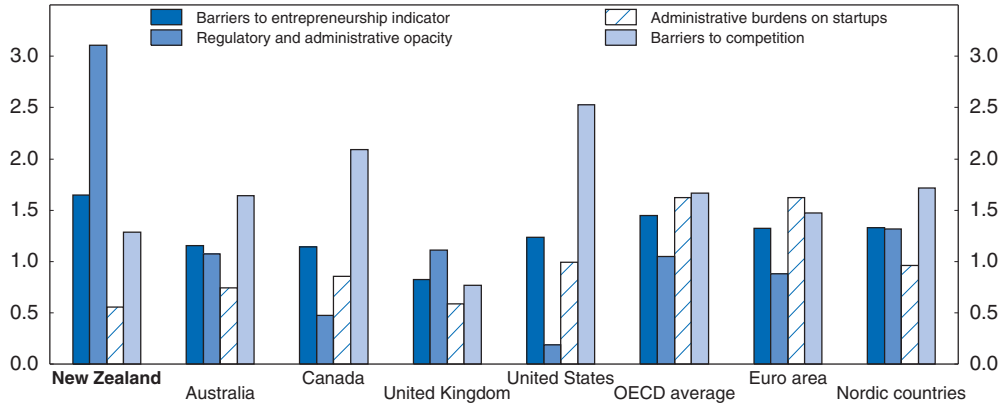
An efficient telecommunications market would help mitigate the impact of economic geography on New Zealand's economic performance. However, the international mobile roaming market segment, which is currently unregulated, suffers from insufficient competition and displays symptoms of market failure. Of particular importance, the pricing of international roaming in Australia appears to be relatively high and pricing transparency and consumer awareness relatively low in comparison to what might prevail in a competitive market (MED/DBCDE, 2010). As such, effective regulation is required in this area to improve transparency and lower prices to competitive levels, thereby allowing mobile telecommunications to play a significant role in facilitating a single trans-Tasman economic market.

In the electricity sector, current investment plans in generation and the transmission grid have recently been assessed to be sufficient in the context of rising energy consumption and long-term supply contracts (Electricity Technical Advisory Group, 2009). However, a necessary condition for fostering investment in a small and isolated energy sector is to ensure sufficient information on firms' investment plans is available to market participants. This highlights the importance of a high level of transparency in network-sector firms. However, this is not always the case in New Zealand, given that some network sectors (electricity in particular) are dominated by state-owned enterprises (discussed in detail below).

Barriers to entrepreneurship

The administrative burden associated with starting a business, which is often used as a headline measure of red tape, has remained low in New Zealand. In addition, the World Bank ranks New Zealand as the third least restrictive country for the "ease of doing business", highlighting generally low barriers and efficient enforcement of regulations on starting, operating and closing a business (World Bank, 2010). This is reflected in a healthy rate of "creative destruction" among NZ firms, with firm turnover making a positive contribution to aggregate productivity growth (Mills and Timmins, 2004; Law and McLellan, 2005). However, the broader estimate of barriers to entrepreneurship in the PMR indicators has increased slightly in New Zealand since the early 2000s, whereas virtually all other OECD countries have made solid progress in this regulatory domain (Figure 3.10).[12] As a result, New Zealand was recently assessed to be in the lower third of OECD countries in terms of barriers to entrepreneurship, suggesting that its regulatory and administrative systems are more onerous and less transparent than elsewhere.

Figure 3.10. **The barrier to entrepreneurship indicator and main sub-indicators, 2008**



Source: OECD, OECD.stat, *Market Regulation Database*.

StatLink http://dx.doi.org/10.1787/888932399962

Regulatory uncertainty is a barrier to entrepreneurship

A range of regulatory settings and policy actions indicate that product market regulation in New Zealand is prone to a degree of uncertainty, which has the potential to repress entrepreneurship and investment. Evans *et al.* (2009) recently cited a number of regulatory interventions that are indicative of a lack of protection from state takings of property rights without compensation including: changes to the government's valuation policy on Crown pastoral leases and the treatment of pre-1990s forests under the Kyoto protocol. These authors also argue that policymakers and administrators have excessive discretionary power and that special interest groups wield considerable influence. For example, a recent review concluded that the Resource Management Act is considered to have hindered development by giving too much discretionary power to the local councils that administer it resulting in reduced growth without improved environmental outcomes (The 2025 Taskforce, 2010) (see Chapter 4).

Regulatory uncertainty is exacerbated by occasional *ad hoc* policy changes that can occur without any formal analysis of the associated costs and benefits. One of the most egregious recent examples is the 2008 amendment to the regulations under the Overseas Investment Act that was made to prevent foreign investment in Auckland International Airport, but imposed considerable private costs on some in the domestic economy. Despite laudable intentions and the obvious urgency of the situation, the *Canterbury Earthquake Response and Recovery Bill*, which was rushed through the House in one day and gives government the power to alter the effect of almost any piece of legislation on the statute books, also reflects an approach to policymaking that puts little weight on consistency.[13]

Policy uncertainty suggests that New Zealand's system of regulatory governance suffers from a lack of checks and balances to encourage stability and ensure that the basic rules regulating markets are not easily changed. This is exacerbated by a very "hands on" approach from some government ministers, who are often involved in regulatory decisions and enforcement at a very detailed level.

Regulatory governance needs to continue improving

Increased barriers to entrepreneurship, excessive policy inconsistency and regulatory uncertainty raise questions about the ability of New Zealand's system of regulatory governance to consistently deliver high-quality regulation. Regulations need to be both adaptable and predictable so that market participants can be confident that past regulatory decisions will be respected and that future decisions will be made in a way that is consistent with precedent, unless it is clear that the previous approach was flawed in some important way. This is a difficult challenge in all OECD countries and calls for an explicit policy that sets out the principles and broad objectives of the regulatory system.

With this in mind, the government issued a statement on "Better Regulation, Less Regulation" in August 2009 vowing to introduce new regulation only when it is "required, reasonable and robust" and to review the stock of existing regulation to identify and remove requirements that are "unnecessary, ineffective or excessively costly".[14] Although this is clearly a welcome development, a more specific statement outlining the importance of competition and the government's approach to promoting it would help ensure consistency in the regulatory reform process and in setting a regulatory reform agenda. This was the approach taken in Australia's National Competition Policy (NCP) legislative programme, which was implemented in the mid-1990s to embed a guiding principle in the regulatory framework that there should be no regulatory restrictions on competition unless they are in the public interest (Box 3.2).

As well as setting broad framework parameters, the government has also improved other aspects of regulatory governance. A ministerial portfolio for regulatory reform has been created to increase the political profile of the issue. Responsibility for assessing the adequacy of economically significant regulatory proposals and helping the government set a programme for reviewing existing regulation has moved to a Regulatory Quality Team within the Treasury. Regulatory Impact Statements (RISs) have been mandatory for regulatory proposals going before Cabinet for many years but are receiving increased attention and visibility. The government is also setting up a Productivity Commission that will work along the same lines as its Australian counterpart.

The government is also considering implementing a Regulatory Responsibility Act to improve accountability and transparency by establishing quality benchmarks for

Box 3.2. **Regulatory governance in Australia**

In many respects, the Australian experience provides a good framework for the application of regulatory reform strategies and regulatory governance. Australia has a well established precedent in using regulatory management systems and was a very early adopter of Regulatory Impact Analysis (RIA) and institutions for overseeing and improving regulatory quality. The Productivity Commission, which is the government's independent research and advisory body on a broad range of issues, has played a key role in helping successive governments improve the regulatory framework in the nation's long-term interests.

Australia's framework for regulatory governance arose out of a series of institutional and regulatory reforms enacted under the National Competition Policy (NCP) over the period 1995-2005. The NCP reforms consisted of a range of strategies including:

- the establishment of the National Competition Council as an independent assessor of the performance of all governments (including state governments);
- the introduction of regulatory gate-keeping measures to scrutinise new regulatory proposals and ensure that any restrictions on competition are explicitly justified; that is, that the benefits of the restriction to the community as a whole must outweigh the costs, and that the objectives of the legislation can be achieved only by restricting competition; and
- the introduction of measures to ensure legislatively backed third-party access to essential infrastructure services.

In conjunction with increased exposure to international trade during the 1980s, product market liberalisation conducted under the framework of the NCP has reduced barriers to market entry and exit, improved anti-competitive regulation and exposed government-owned businesses to market forces in a competitively neutral manner. As a result, Australia has experienced strong economic performance, with high and steady growth that has raised its per capita income to among the highest in the OECD. The Productivity Commission (2005) reports that the NCP "has delivered substantial benefits to the Australian community which, overall, have greatly outweighed the costs".

Building on the success of the NCP, Australia has recently embarked on a National Reform Agenda (NRA) to continue improving regulation that impacts on competition and human capital. The aim of the competition and regulation stream is to facilitate a "National Seamless Economy" by eliminating internal regulatory barriers. This includes further measures to broaden the structural reform process, enhance competition in the energy and transport sectors, implement a simpler and more consistent national approach to the economic regulation of significant infrastructure and reduce the regulatory burden imposed by all three levels of government as well as others to ensure best-practice regulation making and review.

Some of the key elements emphasised in Australia's regulatory governance experience include the goal of continuous improvement in regulation, as opposed to one-off reviews and target-driven reform programmes; an emphasis on removing outdated regulation that is excessively burdensome on business or unfair to consumers; and, a commitment of no net increase in the regulatory burden arising from new Commonwealth regulation (Tanner, 2008).

regulation based on "principles of responsible regulation" that cover a range of areas.[15] The proposed Act would compel policymakers to consider the full costs and impacts of new legislation at an early stage in the development process. If implemented, it would give the courts a discretionary declaratory role limited to assessing the compatibility of legislation

in light of the principles it lays down. This would represent a major, quasi–constitutional change in the role of the courts that could be challenging to implement.[16] However, by introducing quality benchmarks and increasing the level of scrutiny of new regulation, this relatively novel approach may offer a pragmatic solution to instilling a degree of discipline and promoting consistency in regulation across the whole of government. The challenge is to define the "principles of reasonable regulation" in a way that is broadly acceptable and requires minimal interpretation by the courts. Should this difficult task prove impossible, the government should consider introducing more targeted select committee scrutiny to improve the quality of legislation.

More broadly, with many of the elements of a good system of regulatory governance already in place, the ongoing challenge is to continue improving the implementation of better regulatory policies. This amounts to cultural change within the public bureaucracy, which takes time and political will. Continued work is required to advance the regulatory reform agenda under which ministers and their departments are more clearly accountable for the quality of regulation in their portfolios and instigate a culture of continuous improvement supported by evidence-based decision-making. The use of regulatory tools, including the systematic use of sunset clauses and a commitment from government that there will be no net increase in regulatory burden arising from new regulation, could also improve the regulatory management system. The current system of regulatory screening, which includes annual Regulatory Reform Bills that repeal redundant Acts and Regulations, needs to be strengthened and given more Ministerial attention. Building on past achievements, the RIA process needs to become more rigorous and an integral part of policy development and the culture of government departments (NZIER, 2009).

Although consultation on new regulatory proposals generally occurs, it is rare for legislation to be reviewed on the basis of feedback, implying that consultation processes could also be improved. In addition, although parliament's Regulatory Review Committee is empowered to disallow regulations on the basis of *ex post* evaluations, it has not often done so and therefore does not inject a great deal of discipline into regulatory policymaking. Advocacy for increasing regulatory quality could also be increased, and the establishment of the Productivity Commission is a welcome development in this regard.

The competition policy framework needs updating

The aim of New Zealand's basic competition law – the Commerce Act (1986) – is to promote economic efficiency by safeguarding competition in NZ markets. Mergers and acquisitions, restrictive trade practices and price controls that conflict with this aim can be authorised by the Commerce Commission, the principal enforcer of competition law, if they "will result, or will be likely to result, in such a benefit to the public that it should be permitted". This implies that agreements or mergers that lead to greater economic efficiency or other public benefits can be authorised if the benefits are considered to outweigh any anti-competitive effects. In essence, this entails authorisations for mergers and practices that increase the sum of consumer and producer surpluses and admits the acceptability of consumers paying prices above competitive levels (Bertram, 2004).

This total surplus or efficiency criterion is predicated on New Zealand's economic geography, which, as discussed above, implies that domestic firms are more likely to produce at less than minimum efficient scale (Evans and Hughes, 2003; Evans, 2004). Thus, the presumptions, rules of thumb and "*per se*" rules used in much larger economies, where firms are more likely to benefit from scale economies without compromising competition,

may not be appropriate for New Zealand. Even though efficiency concerns are by no means unique to New Zealand, this implies that enforcing competition law is a difficult balancing act that often calls for a relatively subjective case-by-case approach that is complex and resource intensive.[17] Accordingly, it is important that the Commerce Commission be well resourced with highly skilled professionals to ensure that the Commerce Act is implemented to the highest possible standard.

Perhaps reflecting the intricacies of enforcing competition law in a small and distant economy, the time required for Commission decisions has sometimes been lengthy. As such, the Commission's recent efficiency drive – which has involved restructuring its activities into two branches from six and streamlining the process for authorisations that have obvious public benefits – is welcome. The Commission could also benefit from using a wider range of interventions, such as remedial orders, the payment of damages and/or compensation and public warnings, to resolve cases more quickly and free up resources for new investigations.

Consideration also needs to be given to introducing criminal sanctions for cartel formation, which has recently been a growth area for the Commission, reflecting the introduction of a leniency and cooperation programme (King, 2010). The issue of prohibiting tacit price collusion may also warrant consideration, as is currently being done in Australia. *ex post* evaluative studies of the market impact of mergers and acquisitions and other Commission decisions, which are currently done on a trial basis, would also be useful in assessing the net benefits of Commission decisions.

New Zealand's prohibition of abuse of dominance – taking advantage of a substantial degree of market power – has proven particularly difficult to implement. In the 25 years since the Commerce Act came into force, the Commerce Commission has had only very limited success in proceedings under this section of the Act. In addition, the recent Supreme Court loss against *Telecom* also raises questions about New Zealand's approach to unilateral conduct. While monopolisation law is a perennial challenge in all countries, this suggests that New Zealand's law on unilateral conduct is impractical and needs to evolve further (Ahdar, 2009).

In particular, New Zealand and Australia are unique among OECD countries in assessing dominance cases using a "purpose test" (that the conduct had an anti-competitive purpose) and a "counterfactual test" (that the conduct could not have occurred in the absence of market power). International best practice does not involve either of these tests but, instead, focuses primarily on whether behaviour by a dominant firm is likely to create demonstrable consumer harm (OECD, 2005). The NZ experience demonstrates that proving anti-competitive purpose and assessing the nexus between market power, purpose and the counterfactual test are extremely difficult. Indeed, recent amendments to Australia's Trade Practices Act have clarified the term "taking advantage of" in a more flexible way that is not limited to the counterfactual test (Meech, 2010). To allow greater flexibility in the application of New Zealand's monopolisation law and ongoing harmonisation with Australian competition law, the Commerce Act needs to be amended along the same lines as Australia's legislation. In addition, the competition law in Mauritius, which was drafted with the assistance of the OECD, represents best practice for a small economy and may also provide a useful benchmark against which New Zealand's framework could be assessed.

More broadly, the advocacy role of the Commerce Commission in promoting competition and the Commerce Act as means to an end – the enhancement of economic

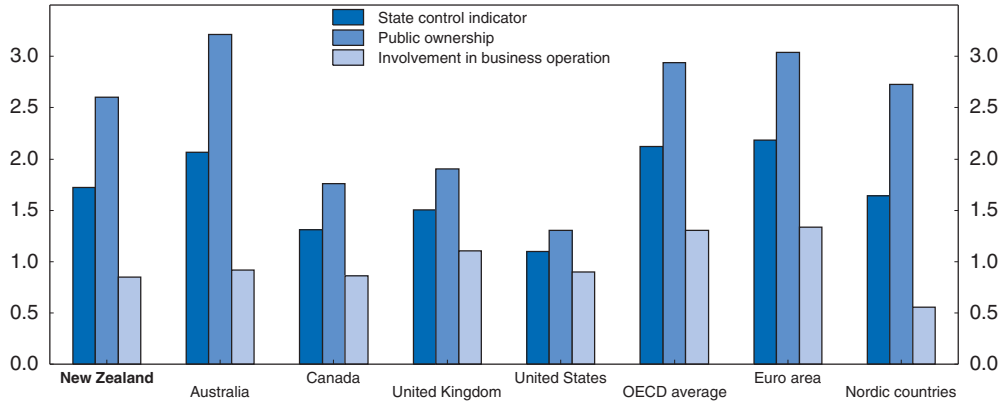
efficiency and welfare – could be improved. The Commission should also be able to conduct market studies without reference to a merger application or other investigation, as is the case in Australia. These changes would help strengthen the competition culture among policymakers and the public and reduce the inconsistencies in New Zealand's policy approach to competition. In addition, more background work on assessing New Zealand's industrial structure needs to be done to help minimise subjectivity in enforcement decisions involving competition-efficiency tradeoffs.[18]

With economic activity increasingly integrated across countries, international co-operation and information sharing is a pre-requisite for effective competition law enforcement. As such, the recent establishment of cross-appointments between the Commerce Commission and the Australian Competition and Consumer Commission (ACCC) is a welcome development that should facilitate convergence in the approaches of the two regulators. This should improve the ability of businesses to conduct seamless operations across the Tasman without regulatory overlap and reduce spatial transaction costs and the relatively high cost of competition law enforcement in New Zealand. Indeed, as the aspiration of a genuine Single Economic Market across New Zealand and Australia comes to fruition, the Commerce Commission and the ACCC need to become increasingly integrated. As part of this process, the *International Co-operation and Fees Bill*, which allows greater cooperation and information sharing between the Commission and other competition regulators, particularly the ACCC, should be passed.

State control

From 1998 to 2008, the extent of state control in the New Zealand economy increased slightly, reflecting increased scope of the public enterprise sector and greater government involvement in network industries (Figure 3.11). With the exception of Luxembourg, all other OECD countries reduced state control over this period, and New Zealand has thus slipped down the rankings.

Figure 3.11. **The state control indicator and main sub-indicators, 2008**



Source: OECD, OECD.stat, *Market Regulation Database*.

StatLink http://dx.doi.org/10.1787/888932399981

Government influence in product markets has increased

The NZ government owns around 45 different companies and commercial entities – including 17 state-owned enterprises (SOEs) – that collectively employ around 26 600 people (about 1.5% of total employment) and have a total capitalisation of around NZD 28 billion (COMU, 2010).[19] Over the last ten years, the government has increased its portfolio of SOEs by buying an 80% stake in Air New Zealand and establishing Kiwibank, both in 2001, and buying back KiwiRail (formerly Toll) in 2008. SOEs dominate electricity generation and transmission and include the country's largest farming business and coal mining operator. SOEs are also active in the land and environment, services, infrastructure and communications sectors. The Accident Compensation Corporation, a Crown agent, has a statutory monopoly in the provision of workplace accident insurance.

The operating context of New Zealand's SOEs is governed by the *State-Owned Enterprise Act* (1986). This Act aims to align SOE management with that of the private sector by establishing commercial freedom and responsibility and requiring that they be as profitable and efficient as comparable private-sector businesses. Competitive neutrality is maintained between SOEs and the private sector, and any non-commercial activities that SOEs are required to perform must be transparently funded by government. Ownership monitoring of the SOEs is done by the Crown Ownership Monitoring Unit (COMU) within the Treasury, and each SOE has two shareholding ministers – the responsible Minister (in most cases the Minister for SOEs) and the Minister of Finance, each of whom holds 50% of the company's shares. The shareholding Ministers appoint a Board of Directors to oversee the management of each SOE.

The financial performance of the SOEs is mixed

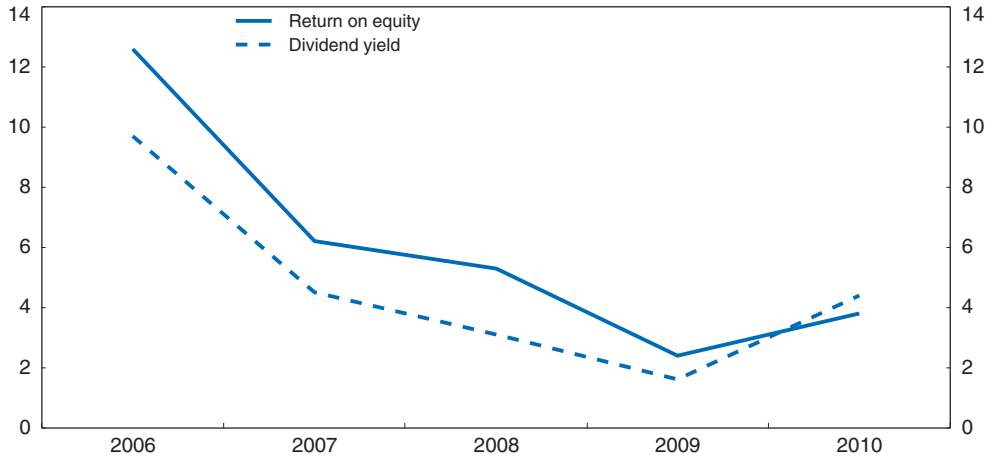
Despite the requirements of the SOE Act, the financial performance of New Zealand's SOEs has been mixed. Although a few have been highly profitable, the (weighted) average return on government equity invested in the SOEs was a mediocre 6½ per cent over the four years to 2009 (Figure 3.12), compared to nearly 9% for all companies. At the firm level, dividend yields have been volatile and, on average, lower than for comparable companies listed on the New Zealand stock exchange (COMU, 2010). Generally speaking over this period, the SOEs have invested heavily in new plant and other assets in New Zealand, but the government has yet to see a commensurate increase in profits and returns.

This mixed financial performance reflects a number of factors. Despite the good intentions of the State Owned Enterprise Act, it is difficult to fully insulate SOE management from a sense of political accountability that can cloud commercial objectivity. For example, a number of SOE senior executives report that they are unduly influenced by changes in the political climate and are relatively risk averse, given a fear of the political ramifications of commercial failure (Luke, 2010). Also, although SOE boards now typically have a high level of control over strategic and investment decisions (Cameron and Beattie, 2007), there are still anecdotal reports of ministers wielding influence in SOE management decisions, such as senior appointments.

As well as imposing a low risk appetite on some of New Zealand's largest firms, government ownership also results in relatively poor transparency and disclosure standards. By way of illustration, the quality and quantity of information supplied to taxpayers after KiwiRail moved back into state ownership was much lower than the level of disclosure for other listed transport companies under private ownership (Heatley, 2010).[20]

In an attempt to mimic the disclosure requirements of listed private-sector companies, the government has recently instigated a number of changes to improve transparency and accountability (House of Representatives, 2010). In particular, the larger SOEs are now required to maintain a continuous disclosure regime and expected to hold annual public meetings. A suite of financial performance measures has also been developed and must be included in each company's Statement of Corporate Intent from 2010/11. In addition, COMU recently began publishing an Annual Portfolio Report that includes up-to-date analysis of SOE performance.

Figure 3.12. **Return on equity and dividend yield of the state-owned enterprises**



Source: COMU (2010), *2010 Annual Portfolio Report*, Wellington.

StatLink http://dx.doi.org/10.1787/888932400000

A partial float of the SOEs has some advantages

These characteristics of the framework – a mixed financial performance, risk aversion and poor but improving transparency requirements – indicate that the commercial disciplines applied to New Zealand's SOEs are less consistent than what the market would provide. This impacts on results and could be an important reason why New Zealand's large firms are relatively poor performers in international comparison (Treasury, 2008b). From a broader perspective, although the SOE Act provides a very good framework, it is likely that SOEs are a relatively unpredictable and intimidating market presence, thereby restricting competition and discouraging FDI, with negative implications for aggregate productivity.

The rationale for privatisation is well known in New Zealand. Although the international experience suggests that privatising SOEs in competitive markets is economically beneficial (Megginson and Netter, 2001), the domestic debate remains clouded by lingering concerns stemming from the experience of the late 1980s and early 1990s. In particular, privatisation carries negative connotations given past privatisation failures (such as the recent buyback of KiwiRail) as well as perceptions that some former SOEs were sold too cheaply and that privatisation merely replaced public monopolies with private ones during the era of light-handed regulation. Privatisation also raises concerns over economic sovereignty, reflecting foreign investment in former SOEs (in part a function of low private domestic saving and a lower cost of capital abroad).

The government is currently considering the merits and viability of selling minority stakes in some of the SOEs.[21] If pursued, this would be an important innovation in New Zealand's model of SOE governance that would help push SOEs' performance towards that of private-sector companies. To begin with, partial floats would subject SOEs to the corporate governance disciplines of stock market listing requirements, thereby enabling and encouraging increased transparency, direct monitoring and independent analysis of SOE performance. Partial privatisations would also improve SOE access to capital, which would facilitate their expansion into offshore markets and help mitigate the impact of New Zealand's economic geography on scale economies.[22] In addition, with a number of SOEs operating in regulated industries, a competitive market for ownership shares would also be an important source of information for regulators and enhance the separation of the ownership and regulatory functions within government. In conjunction with the minority shareholder protections imposed through exchanges and securities regulation, this would minimise the potential for political interference in the strategic decisions of the SOEs. Finally, partial floats would also improve the depth of New Zealand's capital market, which is extremely shallow in international comparison (Hubbard and Evans, 2009), and increase the savings options available to New Zealanders.

Although the likely benefits from partial privatisations are clearly welcome, the government's intention to maintain controlling stakes in SOEs will limit the extent of improvements in firm performance. In particular, by retaining controlling stakes, the government will preclude the possibility of a market for corporate control and thereby curb the potential for restructuring and other management changes to further improve firm productivity (Mulherin *et al.*, 2001; Manne, 1965). In the same way, the government will also forfeit a price premium for control. However, this will arise only if the government chooses to keep its controlling stakes in perpetuity. Indeed, some OECD governments have maximised privatisation proceeds by initially floating small stakes in SOEs and using the resultant improvements in corporate governance as a basis for increasing revenues from later tranches. Accordingly, partial privatisation should be seen as a politically feasible short-run step on the way to full privatisation. In addition, any privatisations should be carried out following the good practises espoused in OECD (2010c).

Barriers to trade and investment

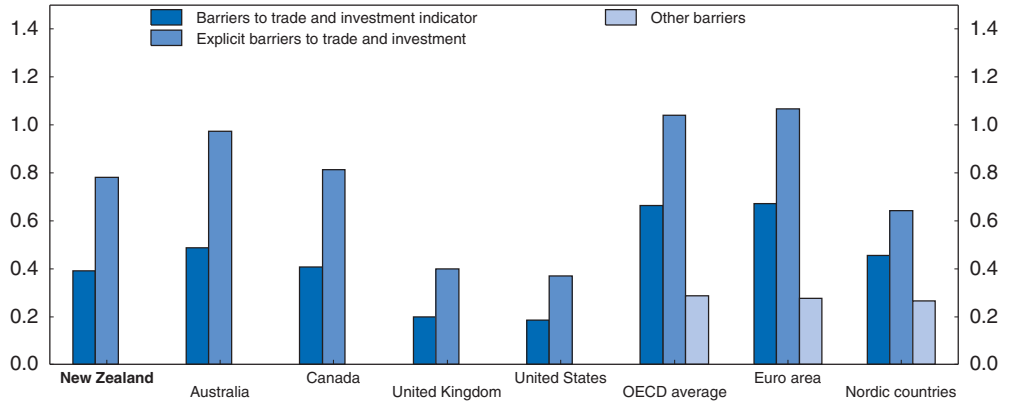
New Zealand has an open policy framework but performs poorly

Because distance from markets is a natural barrier to foreign trade and investment, policies that encourage the integration of domestic and global markets are critically important in increasing competition and scale economies. Not surprisingly, a growing body of literature finds that policies that influence international openness can have a relatively more important impact on economic performance in small countries (Evans and Hughes, 2003). Equally, foreign affiliates tend to be more capital- and skill-intensive and invest more in research and development than domestic firms (Keller and Yeaple, 2009). As such, foreign affiliates in New Zealand and the OECD in general are more productive than domestic firms and an important channel for technological diffusion (Fabling *et al.*, 2008; Criscuolo, 2005).

As part of its reform programme from the late 1980s, New Zealand instigated relatively low barriers to trade and investment that have been broadly preserved over the intervening years. More recently, New Zealand has also negotiated bilateral free-trade agreements with a number of countries, including China, and is a founding member of the Trans-Pacific Strategic Economic Partnership. Given limited progress in reducing barriers to trade and

investment in most other OECD countries, New Zealand continues to be one of the more open countries in a relatively flat distribution of indicators (Figure 3.13). Remaining direct regulatory barriers to trade and investment predominantly reflect New Zealand's FDI screening regime, which, as discussed below, is assessed to be relatively onerous.

Figure 3.13. **The barriers to trade and investment indicator and its sub-components, 2008**



Source: OECD, *OECD.stat, Market Regulation Database.*

StatLink http://dx.doi.org/10.1787/888932400019

Despite having only moderate policy barriers, New Zealand's trade performance has been decidedly mediocre. Although import penetration is higher than in the United States and Australia, it is considerably lower than in a number of the smaller OECD countries, suggesting that imports provide only modest competitive pressure. On the export side, Asia's emergence has moved the world's centre of economic gravity eastwards and greatly benefited some sectors of the NZ economy. However, the overall intensity and diversity of its exports is still comparatively low, and exporters have been unable to capitalise on generally strong growth in export markets since around 2003 (Figure 1.4, Panel E). Services exports have been especially weak (see Figure 3.15 below). Moreover, the bulk of export growth is accounted for by a small number of firms with a relatively small contribution from new exporters, implying that relatively few firms attain efficient scale through exporting (Treasury, 2008b). Overall, the tradables sector has found it difficult to compensate for a high exchange rate *via* productivity improvements.

In contrast to trade, New Zealand's performance in attracting FDI is reasonable, with the GDP share of FDI inflows in the upper third of the range occupied by OECD countries. However, outward FDI is very low in international comparison, perhaps reflecting weak private saving.

Overcoming distance requires greater policy transparency

FDI into New Zealand is governed by the Overseas Investment Act (2005), which lays out the legislative requirements for inward investment and is enforced by the Overseas Investment Office (OIO). This Act requires that foreigners get consent before investing in sensitive land (which is defined according to type of land and area thresholds), significant business assets or fishing quotas. Applications involving sensitive land are assessed on a large number of criteria that are used to determine if the proposed investment will benefit New Zealand. Notoriously,

in 2008, in response to an offer from the Canada Pension Plan Investment Board to buy 40% of Auckland International Airport, a new and somewhat contradictory criterion of whether an investment will "assist New Zealand to maintain New Zealand control of strategically important infrastructure on sensitive land" was retrospectively introduced.[23]

In 2009, the government reviewed the Overseas Investment Act with the aim of reducing the administrative burden and cost and increasing transparency and predictability for foreign investors. As a result, some changes were made to speed up the screening process and reduce the number of applications requiring ministerial approval.[24] In contrast to these changes and the aim of the review, in 2010 the government introduced a new "economic interests" test and a "mitigating factor" test to give ministers more discretion in deciding if a proposed foreign investment involving sensitive land would be in New Zealand's economic interests. On the grounds of safeguarding ministerial discretion, the government also opted to retain the strategic asset test for investment applications involving sensitive land. More encouragingly, in February 2011 an Investment Protocol that lifts the screening threshold for trans-Tasman FDI was signed with Australia, which is New Zealand's largest source of FDI.

The criteria for acceptable foreign investment into sensitive land in New Zealand have thus become increasingly opaque and need to be simplified to increase certainty, clarity and consistency. As in other regulatory areas, increasing the scope for ministerial discretion adds uncertainty and cost to an already complex and non-transparent regime. For example, any genuine concerns about foreign ownership of "strategic assets" should be specified and dealt with under separate explicit ownership controls. Another difficulty with the FDI screening regime is that, in practice, it does not take the private benefits of FDI involving sensitive land into consideration (Heatley and Howell, 2010). Although only a small number of FDI applications are rejected (notwithstanding the possibility that applicants are a self-selected group), this runs the risk of refusing potentially beneficial transactions, negatively impacting on local vendors of sensitive land and restricting both foreign and domestic investment.

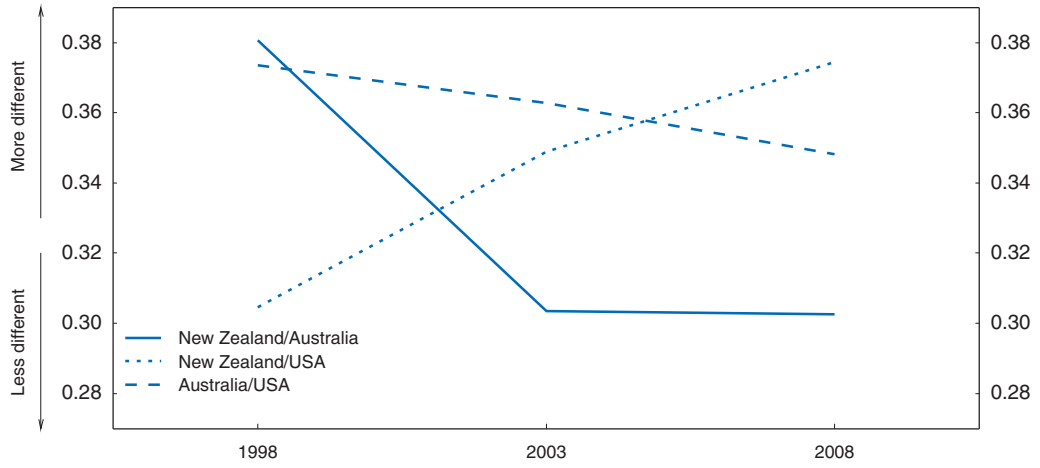
Ongoing harmonisation and mutual recognition will reduce 'behind the border' barriers

Border barriers are not the only potential constraints on trade and FDI. Domestic regulations that restrict competition and differ significantly from those of major potential trading partners can also shelter local incumbents from market entry by foreign firms. Because the services sector has been regulated in idiosyncratic ways across countries, policy heterogeneity across borders can impose considerable costs on firms wishing to establish a footing in offshore markets (Nordås and Kox, 2009). Indeed, it is likely that the border effects found in most studies of international trade occur because a national boundary represents a frontier between two legal and regulatory systems. Given ongoing internationalisation of the services sector, cross-country differences in regulation are most likely becoming increasingly onerous and a binding constraint on the development of many types of services exports.

Differences in product market regulation across pairs of countries can be quantified using the underlying data used to construct the PMR indicators. These indicative indicators of policy heterogeneity show that regulatory differences between New Zealand and Australia are the second lowest of all of New Zealand's OECD country pairings. In no small part, this reflects the impact of the Single Economic Market agenda under which a range of activities and initiatives designed to reduce regulatory barriers to doing business across the Tasman are being progressed. However, differences in the PMR indicators across New Zealand and Australia are larger than in a number of other close trading partnerships in the OECD, such as the United States and Canada, Germany and Austria, and Germany

and France. In addition, these indicators of heterogeneity in PMR suggest that, after falling between 1998 and 2003, regulatory differences across New Zealand and Australia have been broadly unchanged in more recent years (Figure 3.14).

Figure 3.14. **Policy heterogeneity *vis-à-vis* key trading partners**[1]



1. Bilateral Indicators of policy heterogeneity are calculated using the regulatory data contained in the *OECD's Regulation Database*. These indicators measure the extent to which specific policies differ between country pairs. Full details can be found in Nordås and Kox (2009).

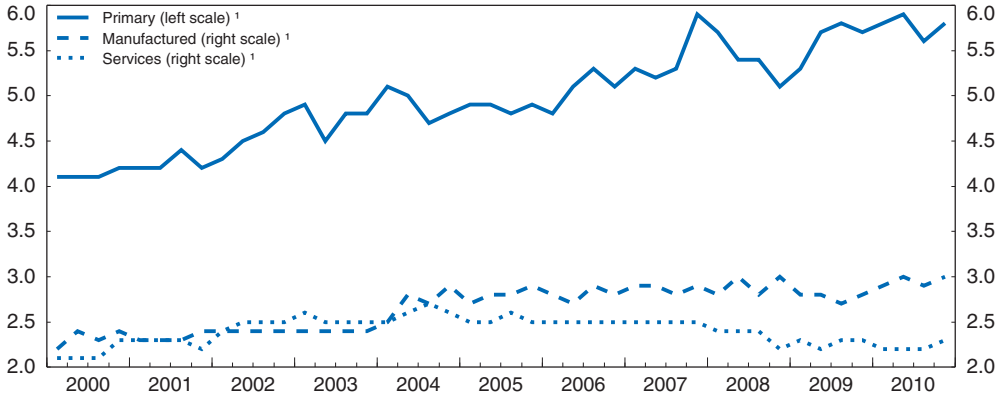
Source: OECD, *OECD.stat, Market Regulation Database* and OECD calculations.

StatLink http://dx.doi.org/10.1787/888932400038

With the New Zealand economy relatively concentrated in services, cross-country regulatory differences could be an important reason why services exports have been so weak over recent years (Figure 3.15). New Zealand's long-run economic trends are not too far out of line with those of Australia's six states and two territories (Grimes, 2004), which, as well as being supportive of a currency union, implies that there are no structural issues

Figure 3.15. **Export volumes**

1995/96 NZD billions



1. The third and fourth quarters of 2010 have been estimated by the Reserve Bank of New Zealand.

Source: Reserve Bank of New Zealand (2010), *Monetary Policy Statement*, December.

StatLink http://dx.doi.org/10.1787/888932400057

standing in the way of a single trans-Tasman market. This underscores the importance of regulatory harmonisation and mutual recognition of standards, such as the trans-Tasman Mutual Recognition Arrangement (TTMRA) and the Closer Economic Relations project.[25]

An ongoing push for greater regulatory harmonisation, mutual recognition and integrated institutions, where appropriate, would continue to reduce spatial transaction costs between New Zealand and Australia and mitigate the negative impact of economic geography. As such, the recent Memorandum of Understanding between the New Zealand and Australian governments, which encourages more cooperation between regulators and policymakers and sets out a range of co-ordination initiatives to deepen business integration, is most welcome. The principles underlying these arrangements need to be broadened and extended to other potential trading partners, particularly in Asia, to reduce the additional compliance costs for firms doing business in offshore markets. However, as with all significant regulatory changes, it is important that harmonisation initiatives be consistent with New Zealand's own objectives and circumstances.

Box 3.3. **Recommendations on how to move product market regulation back towards the frontier**

Network sectors

- Clarify and, if necessary, rearrange the roles and responsibilities of ministries and regulators, particularly in telecoms and transport, to maintain an appropriate arms-length relationship and reduce ministerial involvement in regulatory matters.
- Improve and strengthen the accountability mechanisms around the independent regulators by periodically assessing their impact on the markets they regulate and subjecting their decisions to greater rights of appeal in ways that do not limit the introduction of pro-competitive initiatives.
- Abolish the government's "Kiwi Share" in Telecom. Make coverage obligations contestable by other telecommunications companies and technologically neutral.
- Subject the government's Ultra Fast Broadband Initiative to a full cost/benefit analysis in the context of the regulatory governance framework.

Regulatory governance

- Continue broadening and deepening the use of regulatory governance tools (periodic reviews, sunset clauses and a commitment that there will be no net increase in the regulatory burden arising from new regulation) to: reduce the incidence of *ad hoc* policy changes occurring without any formal analysis of the associated costs and benefits; increase checks and balances in the regulatory management system; and minimise ministerial intervention in regulatory decisions and enforcement.
- Make more consistent and rigorous use of RIA to improve the government's ability to consistently deliver high-quality regulation on the basis of sound, evidence-based reasoning.
- Compliment the government's "Better Regulation, Less Regulation" statement with a statement outlining the importance of competition and the government's approach to promoting it. Complement and support the work of the Treasury's Regulatory Quality Team in overseeing and enhancing the quality of the regulatory process by making Ministers and their agencies more clearly accountable for the quality of regulation in their portfolios and for instigating a culture of continuous improvement in regulatory

Box 3.3. **Recommendations on how to move product market regulation back towards the frontier** *(cont.)*

policy and implementation. Ensure that the Regulatory Quality Team is sufficiently independent.

- Refine the "principles of reasonable regulation" so that they have broad acceptability and require minimal interpretation by the courts. Then pass a suitably refined Regulatory Responsibility Act to improve regulatory accountability and transparency.

Competition policy

- Authorise the Commerce Commission to use a wider range of interventions to resolve cases more quickly and free up resources for new investigations. Consider implementing cartel criminalisation and provisions to counter tacit price collusion.
- Expand the use of *ex post* evaluations of mergers and acquisitions and other Commission decisions so as to assess performance.
- Consider amending the law on unilateral conduct so that the term "taking advantage of" can be interpreted in a more flexible way that is not limited to the counterfactual test, as is the case in Australia.
- Continue enhancing the level of cooperation between the Commerce Commission and its Australian counterparts.

State control

- If full privatisations are infeasible, partially float the SOEs to improve commercial discipline and transparency.

Barriers to trade and investment

- Review the screening regime again for FDI with a view to making it simpler and less expensive for applicants and to remove ministers' discretionary veto.
- Remove all remaining tariffs and Zespri's export monopoly on kiwifruit.
- Continue working towards greater mutual recognition, regulatory harmonisation and common institutions with Australia, where appropriate.

General

- Undertake more basic research on New Zealand's industrial structure and the extent of scale effects, competition and market efficiency.

Notes

1. Structural reforms to overcome these challenges were examined in the previous *OECD Economic Survey*.
2. The OECD's PMR indicators have been used to illustrate broad differences in product market policies in both member and non-member countries since the late 1990s. The indicators summarise a large set of formal rules and regulations that have the potential to reduce the intensity of competition in areas of the product market where technology and market conditions make competition viable. Key papers outlining development of the PMR indicators are: Nicoletti *et al.* (1999), Conway *et al.* (2005), Conway and Nicoletti (2006) and Wölfl *et al.* (2009).
3. For instance, Romp and de Haan (2005) report that 32 out of 39 studies of OECD countries find a positive effect of infrastructure investment on some combination of output, efficiency, productivity, private investment and employment.
4. In contrast to the results of Mills and Timmins (2004), Simmons (2004) finds that New Zealand does have an unusually large number of small firms compared to some other OECD countries.

5. As pointed out in Arnold *et al.* (2003), these results reflect some combination of scale diseconomies and low productivity.
6. This period in New Zealand's economic history has been extensively documented. Among others, see: Silverstone *et al.* (1996), Evans *et al.* (1996), and Dalziel and Lattimore (1999).
7. In an analysis of changes in PMR indicator values, Wölfl *et al.* (2009) confirm that New Zealand is one of a few OECD countries in which the change in product market regulation in the ten years to 2008 is statistically insignificant.
8. Conway *et al.* (2005) find that policy inconsistency tends to increase as the regulatory environment becomes more restrictive across countries.
9. The knock-on effects of regulation in the non-manufacturing sector will also propagate through the economy via a number of other channels such as the effect on the price of investment goods and Baumol-disease effects that act through wages.
10. By way of an example, the United Kingdom was an early starter in opening up network sectors to competition and in implementing many regulatory reforms and best practices that have subsequently been followed by a number of other countries (*e.g.* RPIX price regulation). However, it took over a decade for effective competition to emerge in the telecommunications and energy sectors.
11. This arose recently in the context of collaboration between Air New Zealand and Virgin on the trans-Tasman route. For this to proceed, approval was required from the Australian Competition and Consumer Commission (ACCC) and the New Zealand Ministry of Transport.
12. By way of confirmation, according to survey data, overall compliance costs per full-time equivalent worker for the 50-99 and 100+ sized enterprises have increased slightly since 2004 (KPMG, 2008).
13. Although outside the ambit of product market regulation, recent changes to labour law made to secure the filming of the Hobbit movies in New Zealand were also passed under urgency and indicate that policy is sometimes made on the run.
14. See *www.treasury.govt.nz/economy/regulation/statement*.
15. Specifically, the principles of good regulation recommended by the Taskforce established to review the Regulatory Responsibility Bill fall within six broad categories: rule of law, liberties, taking of property, taxes and charges, role of the Courts, and good law making (Regulatory Responsibility Taskforce, 2009).
16. Currently, the NZ courts do not have responsibility for reviewing regulations but are able to overturn regulatory implementation decisions and may also hold regulations invalid if they do not fall within the statutory power under which they were made.
17. For instance, a range of factors that could impact on concentration and efficient scale need to be considered, including the extent of import competition and countervailing powers, the likelihood of higher prices or margins, the extent of substitutes and product differentiation and the likely path of innovation and other drivers of dynamic efficiencies.
18. A credible dataset of NZ firms has recently become available that opens up a wealth of information that could be used to reduce subjectivity and improve the enforcement of competition law. For details, see Fabling *et al.* (2008).
19. Specifically, the government's portfolio includes: 17 SOEs, 8 Crown research institutes, 4 Crown financial institutions, Air New Zealand Ltd., some statutory entities and a shareholding in a shipping line and four airports. See *www.comu.govt.nz/index.html*.
20. For example, the public version of the government's "turn around plan" for KiwiRail is a mere two pages long and has none of the detail shareholders would expect in evaluating a NZD 750 million investment.
21. In particular, the government has requested Treasury advice on the merits and viability of selling up to 49% of coal miner and exporter Solid Energy, along with up to 49% of its three electricity generators/retailers – Meridian Energy, Genesis Energy and Mighty River Power. It has also requested advice on reducing its 75% stake in Air New Zealand while retaining a majority stake.
22. For example, the Chairman of Solid Energy has recently commented that the company needs up to NZD 10 billion in additional capital over the next five years to fund a number of major projects.
23. Ultimately, this "strategic asset test" was not used and the application to invest was declined by Ministers on the basis that they were not convinced that benefits existed under the Act (Heatley and Howell, 2010).

24. Although there is no mandatory processing time, the OIO aims to turn around 90% of investment applications within 50 working days, but currently only 70% are decided within this deadline. A "creep provision" was also introduced to exempt small incremental increases in foreign ownership from requiring a new application process.

25. The TTMRA allows that any good that may be legally sold in Australia may be legally sold in New Zealand and *vice versa*, and that a person registered in Australia to practice an occupation is entitled to practice an equivalent occupation in New Zealand and *vice versa*.

Bibliography

Acemoglu, D., P. Aghion and F. Zilibotti (2005), "Distance to Frontier, Selection and Economic Growth", *Journal of the European Economic Association*, March 2006, Vol. 4, No. 1.

Aghion, P. and E. Bessonova (2006), "On Entry and Growth: Theory and Evidence", *Revue de l'OFCE*, 2006/3, No. 97bis.

Ahdar, R.T. (2009), "The Unfulfilled Promise of New Zealand's Monopolisation Law: Sources, Symptoms and Solutions", *Competition and Consumer Law Journal*, Vol. 16.

Alesina, A., S. Ardagna, F. Schiantarelli and G. Nicoletti (2005), "Regulation and Investment", *Journal of the European Economic Association*, Vol. 3, No. 4.

Arnold, T., D.B. de Boer and L. Evans (2003), "The Structure of New Zealand Industry: Its Implications for Competition Law", in M. Berry and L. Evans (eds.), *New Zealand Competition Law at the Turn of the Century*, Victoria University of Wellington Press.

Bassanini, A. and R. Duval (2006), "Employment Patterns in OECD Countries: Reassessing the Role of Policies and Institutions", *OECD Economics Department Working Paper*, No. 486.

Battersby, B. and R. Ewing (2005), "International Trade Performance: The Gravity of Australia's Remoteness", *Treasury Working Paper*, 2005-03.

Bertram, G. (2004), "What's Wrong With New Zealand's Public Benefit Test?", *New Zealand Economic Papers*, Vol. 38.

Black, M., M. Guy and N. McLellan (2003), Productivity in New Zealand 1988 to 2003, *New Zealand Treasury Working Paper* 03/06.

Blanchard, O. and F. Giavazzi (2003), "Macroeconomic Effects of Regulation and Deregulation in Goods and Labor Markets", *Quarterly Journal of Economics*, Vol. 118, No. 3.

Boulhol, H., A. de Serres and M. Molnar (2008), The Contribution of Economic Geography to GDP Per Capita, *OECD Economics Department Working Paper*, No. 602, Paris.

Bourlès, R., G. Cette, J. Lopez, J. Mairesse and G. Nicoletti (2010), "Do Product Market Regulations in Upstream Sectors Curb Productivity Growth? Panel Data Evidence for OECD countries", *OECD Economics Department Working Paper*, No. 791, Paris.

Cameron, R. and M. Beattie (2007), "Developing the SOE Model", *Open: State Owned Enterprises*, NZX.

COMU (2010), *2010 Annual Portfolio Report*, Wellington.

Conway, P., V. Janod and G. Nicoletti (2005), "Product Market Regulation in OECD Countries: 1998 to 2003", *OECD Economics Department Working Paper*, No. 419, Paris.

Conway, P. and G. Nicoletti (2006), "Product Market Regulation in the Non-Manufacturing Sectors of OECD Countries: Measurement and Highlights", *OECD Economics Department Working Paper*, No. 530, Paris.

Conway, P., D. de Rosa, G. Nicoletti and F. Steiner (2006), "Regulation, Competition and Productivity Convergence", *OECD Economics Department Working Paper*, No. 509, Paris.

Criscuolo, C. (2005), "The Contribution of Foreign Affiliates to Productivity Growth: Evidence from OECD Countries", *OECD STI Working Paper* 2005/8, Paris.

Dalziel, P. and R. Lattimore (1996), *The New Zealand Macroeconomy: A Briefing on the Reforms*, Oxford University Press, Melbourne.

Davis, G. and J. Rahman (2006), "Perspectives on Australia's Productivity Prospects", *Treasury Working Paper* 2006-04.

Dolman, B., D. Parham and S. Zheng (2007), "Can Australia Match US Productivity Performance?", *Productivity Commission Staff Working Paper*, Australian Productivity Commission, Canberra.

Electricity Technical Advisory Group (2009), "Improving Electricity Market Performance", A preliminary report to the Ministerial Review of Electricity Market Performance, Wellington.

Evans, L., A. Grimes, B. Wilkinson and D. Teece (1996), "Economic Reform in New Zealand 1984-95: The Pursuit of Efficiency", *Journal of Economic Literature*, Vol. 34.

Evans, L. and P. Hughes (2003), "Competition Policy in Small Distant Open Economies: Some Lessons From the Economics Literature", *Treasury Working Paper*, 03/31.

Evans, L. (2004), "The Efficiency Test Under Competition Law and Regulation in the Small Open Economy that is New Zealand", *New Zealand Economic Papers*, Vol. 38, Issue 2.

Evans, L., N. Quigley and K. Counsell (2009), "Protection of Private Property Rights and Just Compensation: An Economic Analysis of the most Fundamental Human Right not Provided in New Zealand", *mimeo*.

Fabling, R., A. Grimes, L. Sanderson and P. Stevens (2008), "Some Rise by Sin, and Some by Virtue Fall: Firm Dynamics, Market Structure and Performance", *Ministry of Economic Development Occasional Paper*, 08/01.

Fox, K. (2005), "Returns to Scale, Technical Progress and Total Factor Productivity Growth in New Zealand Industries", *New Zealand Treasury Working Paper*, 05/04.

Grimes, A. (2003), "The Role of Infrastructure in Developing New Zealand's Economy", Paper presented to Institute of Policy Studies Spring 2008 Lecture Series.

Grimes, A. (2004), "New Zealand: A Typical Australasian Economy", *Motu Working Paper*, 04-11.

Guillemette, Y. (2009), "Structural Policies to Overcome Geographic Barriers and Create Prosperity in New Zealand", *OECD Economics Department Working Paper*, No. 696, Paris.

Haefke, C. and M. Ebell (2004), "The Missing Link: Product Market Regulation, Collective Bargaining and the European Unemployment Puzzle", *mimeo*, Universitat Pompeu Fabra.

Heatley, D. (2010), "Level crossing: Collision Ahead?", *Competition and Regulation Times*, New Zealand Institute for the Study of Competition and Regulation, July.

Heatley, D. and B. Howell (2010), "Overseas Investment: Is New Zealand Open for Business?", New Zealand Institute for the Study of Competition and Regulation.

House of Representatives (2010), "2010/11 Estimates for Vote State-Owned Enterprises", *Report of the Finance and Expenditure Committee,www.parliament.nz/NR/rdonlyres/FFF90154-D09D-49C0-92D1-BBAD62B5D7C1/145849/DBSCH_SCR_4773_201011EstimatesforVoteStateOwnedEnt.pdf*.

Howell, B. (2008), "Strategic Interaction under Asymmetric Regulation: the 'Kiwi Share' in New Zealand Telecommunications", New Zealand Institute for the Study of Competition and Regulation.

Hubbard, L. and L. Evans (2009), "Why Has New Zealand's Equity Market Lost Ground?", *Competition and Regulation Times*, New Zealand Institute for the Study of Competition and Regulation, July.

Keller, W. and S.R. Yeaple (2009), "Multinational Enterprises, International Trade, and Productivity Growth: Firm-Level Evidence from the United States", *Review of Economics and Statistics*, Vol. 91, No. 2.

King, D. (2010), "Criminalisation of Cartel Behaviour", *Ministry of Economic Development Discussion Paper*, 10/01.

KPMG (2008), "Summary Report of the Business New Zealand-KPMG Compliance Cost Survey".

Law, D. and N. McLellan (2005), "The Contributions from Firm Entry, Exit and Continuation to Labour Productivity Growth in New Zealand", *New Zealand Treasury Working Paper*, 05/01.

Luke, B. (2010), "Examining Accountability in State-Owned Enterprises", *Financial Accountability and Management*, Vol. 26, No. 2.

Malyshev, N. (2006), "Regulatory Policy: OECD Experience and Evidence", *Oxford Review of Economic Policy*, Vol. 22, No. 2.

Manne, H.G. (1965). "Mergers and the Market for Corporate Control", *Journal of Political Economy*, Vol. 73, No. 2, April.

Mathewson, F. and N. Quigley (2003), "Market Power Thresholds: Theory and Competition Cases Related to Barriers to Entry, Oligopoly and Joint Dominance", in M. Berry and L. Evans (eds.), *Competition Law at the Turn of the Century*, Victoria University Press, Wellington.

McCann, P. (2009), "Economic Geography, Globalisation and New Zealand's Productivity Paradox", *New Zealand Economic Papers*, Vol. 43, No. 3.

MED/DBCDE (2010), "Trans-Tasman Mobile Roaming", *Discussion Document*, Ministry of Economic Development of New Zealand and the Department of Broadband, Communications and the Digital Economy of Australia.

Meech, O. (2010), "'Taking Advantage' of Market Power", *New Zealand Law Journal*.

Megginson, W. and J. Netter (2001), "From State to Market: A Survey of Empirical Studies on Privatization", *Journal of Economic Literature*, Vol. 39, No. 2.

Mills, D. and J. Timmins (2004), "Firm Dynamics in New Zealand: A Comparative Analysis with OECD Countries", *New Zealand Treasury Working Paper* 04/11.

Mulherin, J., J. Netter and M. Stegemoller (2001), "Privatisation and the Market for Corporate Control", *Claremont Colleges Working Papers in Economics*.

New Zealand Government (2010), *National Infrastructure Plan*, March 2010.

Nicoletti, G., S. Golub, D. Hajkova, D. Mirza and K.Y. Yoo (2003), "Policies and International Integration: Influences on Trade and Foreign Direct Investment", *OECD Economic Department Working Paper*, No. 359, Paris.

Nicoletti, G. and S. Scarpetta (2005), "Product Market Reforms and Employment in OECD Countries", *OECD Economics Department Working Paper*, No. 472, Paris.

Nicoletti, G., S. Scarpetta and O. Boylaud (2000), "Summary Indicators of Product Market Regulation with an Extension to Employment Protection Legislation", *OECD Economics Department Working Paper*, No. 226, Paris.

Nordås, H. and H. Kox (2009), "Quantifying Regulatory Barriers to Services Trade", *OECD Trade Policy Working Paper*, No. 85, Paris.

NZIER (2009), "Regulatory Impact Statements – Evaluation", Report to the Treasury for the Regulatory Impact Analysis Reference Group.

OECD (2005), "Competition on the Merits", *Policy Roundtables*.

OECD (2008), "Indicators of Regulatory Management Systems", *OECD Working Papers on Public Governance*, 2007/4.

OECD (2009a), *OECD Economic Surveys: New Zealand*, OECD Publishing, Paris.

OECD (2009b), *OECD Economic Surveys: Mexico*, OECD Publishing, Paris.

OECD (2010a), *OECD Review of Regulatory Reform: Australia 2010*, OECD Publishing, Paris.

OECD (2010b), *OECD Communications Outlook*, *2010*, OECD Publishing, Paris.

OECD (2010c), *Privatisation in the 21st Century: Recent Experiences of OECD Countries*, OECD Publishing, Paris.

OECD (2011), *Going for Growth*, OECD Publishing, Paris.

Ratnayake, R. (1999), "Industry Concentration and Competition: New Zealand Experience", *Journal of Industrial Organisation*, Vol. 17, No. 7.

Regulatory Responsibility Taskforce (2009), *Report of the Regulatory Responsibility Taskforce*, Wellington, September.

Romp, W. and J. de Haan (2005), "Public Capital and Economic Growth: A Critical Survey", *EIB Papers*, Vol. 10, No. 1/2005, European Investment Bank, Luxembourg.

Silverstone, B., A. Bollard and R. Lattimore (eds.) (1996), *A Study of Economic Reform: The Case of New Zealand*, North-Holland, Amsterdam.

Simmons, G. (2004), "The Impact of Scale and Remoteness on New Zealand's Industrial Structure and Firm Performance", in J. Poot (ed.), *On the Edge of the Global Economy*, Edward Elgar, Cheltenham, UK and Northampton, Mass., USA.

Tanner, L. (2008), "Best Practice Regulation Requirements", Ministerial Statement to Parliament. *http://parlinfo.aph.gov.au/parlInfo/genpdf/chamber/hansardr/2008-03-17/0066/hansard_frag.pdf;fileType%3Dapplication%2Fpd*.

The 2025 Taskforce (2010), *Focusing on Growth: Closing the Income Gap with Australia by 2025*, Second Report, 3 November, Wellington.

Treasury (2008a), "Putting Productivity First", *New Zealand Treasury Productivity Paper* 08/01.

Treasury (2008b), "Enterprise and Productivity: Harnessing Competitive Forces", *New Zealand Treasury Productivity Paper* 08/04.

Warmke, N., A. Tipper, L. van Heerden and T. Hunter (2010), "Uncovering Industry Drivers of New Zealand's Labour Productivity Growth", *mimeo*, Statistics New Zealand.

Wölfl, A., I. Wanner, T. Kozluk and G. Nicoletti (2009), "Ten Years of Product Market Reform in OECD Countries – Insights From a Revised PMR Indicator", *OECD Economic Department Working Papers* No. 695.

World Bank (2010), *Doing Business 2011: Making a Difference for Entrepreneurs*, Washington.

Chapter 4

Green growth and climate change policies

New Zealand, as a resource-based economy anxious to protect and promote its clean-and-green image, appropriately sees green growth as a natural direction for future development. The country's environment is of high quality, and depletion of its abundant natural resources is for the most part not a problem. Nevertheless, there are challenges. With little pricing of water resources, water scarcity is being felt increasingly acutely in some dairy-intensive regions prone to drought. Water-quality degradation is linked to leakage from farming by-products. Agricultural activity also gives rise to nearly half the country's greenhouse gas (GHG) emissions, though electricity consumption and private transport are growing sources of pressure. New Zealand's GHG intensity of output is the second highest in the OECD (after Australia's), not surprising for a resource-rich country. Its unique emissions profile, however, makes for costly mitigation: an exceptionally high proportion of electricity generation is already renewable-based (mainly hydro), and no technology to significantly reduce methane from ruminant animals yet exists. New Zealand is a pioneer in implementing an emissions trading scheme (NZ ETS) covering all sectors and gases. Green growth could best be supported by the greater use of market mechanisms among a range of instruments in natural resource management and by strengthening price signals in the NZ ETS.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

According to OECD (2011), green growth involves mutually supportive economic and environmental policies. The previous chapters argue that boosting New Zealand's competitiveness will depend on adopting best-practice economic policies that will encourage innovation and productivity improvements throughout the production chain. This chapter will show how this also depends on nurturing a competitive advantage in natural capital.

Green growth – a long-run competitive advantage

New Zealand, even though it is a small country accounting for only 0.2% of world GDP, is highly affected by the global environmental policy agenda. By taking its international obligations seriously, notably under the Kyoto protocol, it stands to gain a place at the table when accounting rules for the treatment of forestry and agriculture, which concern New Zealand's emissions profile acutely, are discussed. Furthermore, small countries can play significant symbolic roles: by showcasing its own sustainable economic management, and by doing its own fair share, New Zealand encourages others to do the same, thereby moving the system forward. Even though its actions directly contribute little to either causing or reversing global ecological degradation, each tonne of its CO_2-equivalent emissions reduction is as good as any other (Kerr, 2009).

New Zealand has much to gain from the green growth agenda, given that its prosperity depends significantly on its own natural resource heritage, which clearly must be safeguarded. Cooperating on global climate change is likewise in the national economic interest, given New Zealand's susceptibility to its impacts. According to reports from the Intergovernmental Panel on Climate Change, these include water security and drought risks, and increased coastal flooding and storm events. Moreover, the economic value of the "100% pure" global NZ brand should not be underestimated. The brand needs to be carefully honed by enlightened policies that allow exporters to better tap into upscale markets where ethical values are increasingly entering into spending and investment decisions. Consumers and retailers in richer countries are becoming more demanding about the ecological provenance of products ("value chain integrity", including animal welfare).[1] By credible reinforcement of its clean-and-green image, New Zealand may be able to forestall action (instigated by either foreign competitors or public interest groups) against its exports of both goods and services (notably dairy and tourism).

Perhaps most fundamentally, adopting environmental policies that internalise the cost of externalities of economic growth can confer a longer-run competitive advantage, leading to greater investment, product differentiation, innovation, etc. (OECD, 2010a). It would better position New Zealand to supply new green-based wants and technologies to a world eager for them, including emerging markets in East Asia. Developing new niches based on value added in the form of human capital linked to the environmental theme may also help diversify and expand exports beyond natural resource exploitation activities, which face physical limits. There is already a strong core of firms in the clean technology

area – renewable energy, sustainable biofuels, sustainable agriculture, energy efficiency and sustainable design, hybrid transport and waste minimisation (Oram, 2009) – whose expansion and growth can be encouraged by valuing scarce natural capital and pricing externalities, notably greenhouse gas (GHG) emissions. Such industries will need to stay ahead of the competition.

Sustainable development: growth within limits

Sustainable development is a cross-sector policy approach that seeks to balance material prosperity with avoiding environmental degradation, *i.e.* economic growth that is based on the sustainable use of natural resources. Natural resource management, climate change, water and waste management are widely accepted in New Zealand as being of fundamental significance to its present and future welfare. While environmental quality is still high, worsening performance trends are being seen in a number of key indicators, such as GHG emissions and, in some areas, water quantity and quality. Threats to the nation's unique biodiversity have grown with its increasing integration into the world economy.

Sustainable development has been aptly defined in New Zealand as a pattern of growth that raises living standards without prejudicing future generations. This concept also encompasses broader aspects of well-being for all generations than those captured simply by GDP (*e.g.,* Stiglitz *et al*., 2008). New Zealand is one of the few OECD countries with a wide positive gap between subjective well-being as measured by life-satisfaction surveys and net national income per capita. Besides environment and lifestyle, such notions of happiness often incorporate social factors like equality of income and opportunity. In keeping with multiple objectives the OECD has called for growth that is "strong, fair and clean".

The governance framework: the Resource Management Act

The Resource Management Act 1991 (RMA) and planning under it are the principal means through which the environmental effects of economic activities are managed in New Zealand. The core purpose of the Act is to promote the sustainable management of natural and physical resources by safeguarding the life-supporting capacity of air, water, soil and ecosystems. Regional and territorial plans and policy statements must be consistent with national regulations, standards and policies, as determined by National Policy Statements (NPSs) and National Environment Standards (NESs). Under section 32 of the RMA, regions must consider costs and benefits of proposed policies for achieving the desired outcomes, including alternative methods (market-based instruments, information or voluntary action, etc.) when the default option is command and control. The Act also allows further devolution of environmental policy responsibility to communities and stakeholders: for example, conservation covenants with private landowners, voluntary commitments by companies, NGO surveillance, public information and clean-up activities. Public consultation is mandatory in planning and policy development.

In principle, the system of hierarchies imposed by the RMA makes for an *ex ante* robust governance framework. It combines the advantages of national unifying goals and strategic policy direction (technical expertise, political tradeoffs) with those of subsidiarity (local knowledge and accountability, flexibility) in its implementation. The Local Government Act 2002 (LGA) bolstered local authorities' scope of action under a sustainability mandate. The LGA consolidated a confusing plethora of former laws and bylaws, with the aim of: *a*) enabling democratic decision-making and action by, and on behalf of, communities; and

b) promoting the social, economic, environmental, and cultural well-being of communities, in the present and in the future.

In practice, however, the system has worked less than smoothly. Regional and district councils implement policies largely by a system of "consents", namely, the granting of permits or permissions to use resources, water or land, in the course of economic activity on condition that the relevant environmental norms are respected. A consent is thus a time-bound entitlement to "take" common-pool natural resources. Full devolution with greater local autonomy has given rise to an inconsistent approach to regional consenting, however, creating regulatory uncertainty and an uneven playing field for business. The quality of regional plans is highly variable. Cost-benefit reports generally suffer from a lack of any quantitative analysis or national government oversight. Market-based instruments, known to be more efficient than command-and-control measures (Sharp, 2002; de Serres *et al.*, 2010), are rarely used. The general lack of pricing in resource allocation makes for a contentious and lengthy consenting process. Applicants or third parties may appeal councils' decisions to the Environmental Court, which has had to interpret the RMA. Multiple appeals are used strategically, allowing applicants to redesign their petitions to fit the views of the court until they are approved or finally withdrawn. Third parties can join appeals and often do so for anti-competitive rather than environmental purposes.

The Act has been amended twice, in 2005 and 2009, to address such issues (Box 4.1). Also, in 2010 the government created an Environmental Protection Authority (EPA), a Crown entity focused on environmental policy implementation in matters of national interest (*e.g.* waterways that cross regional boundaries or infrastructure projects with national impact). The creation of the EPA provides hope of a technically skilled and independent administration effectively advocating for the environment. It should set and

Box 4.1. **The 2009 (Phase I) RMA amendments**

The October 2009 RMA amendments sought to reduce the problem of long delays for consenting and to deter frivolous objections and appeals and anti-competitive behaviour, which greatly reduce regulatory efficiency.

Long delays for consenting

Three main instruments were introduced. First, applicants were given the ability to refer potentially contentious applications directly to the Environmental Court (by-passing the local authority hearing and decision stages). One successful use of this instrument so far (a supermarket application) resulted in a decision within nine months, a saving of more than a year over what might otherwise have been expected. Experience has shown that the main objectors to new supermarkets tend to be competitors, and there appeared to be no objections on competition grounds on this occasion. Second, applications for resource consents may now be made directly to the newly established EPA. Actual applications and those under discussion so far represent a total of NZD 8.5 billion in infrastructure work. The EPA reports that decisions on these projects are on track to be made well within the required nine months of their public notification, as required by the amendments to the Act. Third, regions are required to provide a discount on administration fees when consent approvals are processed late. This seems to have encouraged a review of internal systems and processes to ensure greater compliance with timeframes among regional councils, though it is too soon to observe the impacts on actual processing and approval times.

Box 4.1. **The 2009 (Phase I) RMA amendments** *(cont.)*

Frivolous objections and appeals and anti-competitive behaviour

Four measures were introduced: *i*) punitive court costs for a finding of anti-competitive behaviour (as proposed by the 2009 *Survey*); *ii*) a narrowing of the range of parties able to join Environmental Court appeal proceedings as a third party; *iii*) explicit restrictions on trade competitors' interventions; and *iv*) the removal of anyone being able to purportedly represent the public interest (a grounds previously used by trade competitors to join appeals). The results of these measures are as yet hard to quantify, especially as transitional provisions mean that appeals by trade competitors of resource consent applicants are still being considered under the pre-amendment provisions. However, anecdotal evidence suggests that anti-competitive behaviour is now less common, as trade competitors are concerned that they may become a test case for the new regime. The depressed economic climate may also be a contributing factor, as fewer resource consent applications are being made, and businesses have given priority to other uses of their resources.

monitor legal standards (NESs) that are clear and enforceable (Sustainability Council, 2010a), and its Board as the body accountable to the *Minister* (rather than the *Ministry* for the Environment, MfE) should be given the power to control the exercise of its functions (PCE, 2011). The government has also taken the drastic step of intervening directly against a regional council for failing to specify a regional plan and poor water management, replacing the commissioners and taking over water consenting and conservation orders while bypassing the Court. While these interventionist steps can be justified as a last resort, they may undermine incentives for local accountability. It is important that the boundary between national and local interests and competencies be carefully drawn so as to preserve the best of the existing system. But local authorities have complained that the national government does not provide sufficient guidance on what sustainable development really entails (OECD, 2007). It is equally important that co-operation within central government itself advances to the point where broader economic policies integrate and are coherent with environmental goals. This currently seems not to be entirely the case with respect to GHG emissions and biodiversity conservation, as will be seen in the examples of policy implementation below.

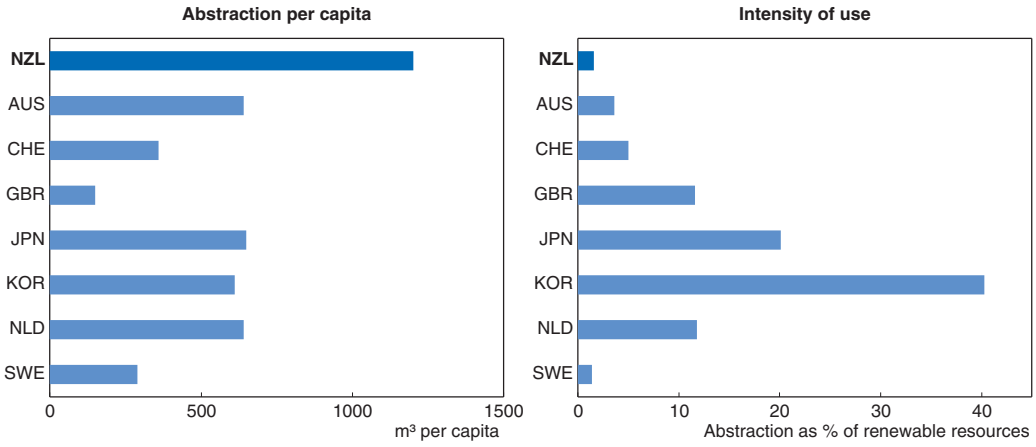
Policy issues in water and land management

Emerging resource limits

Water and land management are closely inter-related. Agriculture needs water, especially in sectors of increasing global demand like horticulture or dairy farming. The relative abundance of water, as well as land, in New Zealand thus helps to explain its comparative advantage in agriculture (Figure 4.1). Nevertheless, recent years' intensification of pastoral agriculture in response to rising world dairy prices – typically by either conversion from sheep and beef to dairy farming or by intensification of existing dairy farms through the subdivision of plots and installation of expensive irrigation systems in drier regions – has exerted unprecedented pressure on water resources (and on rural land prices). At the same time, winter droughts have occurred with increasing frequency. Limits to water resources are being acutely felt in certain regions, such as the east coast of the South Island, which has both a high concentration of dairy farming and exposure to dry weather.[2] Climate variability also means that heavy rains in other areas, notably the west

Figure 4.1. **Water resource use**

2009 or latest available year



Source: OECD data from the Environment Directorate.

StatLink http://dx.doi.org/10.1787/888932400076

coast, can give rise to surfeits of water coexisting with shortages elsewhere. Because of New Zealand's geography, featuring mountainous terrain and short river flows, the geographical redistribution of water is difficult. By contrast, Australia tends to have long rivers covering vast catchments suitable for water trading.

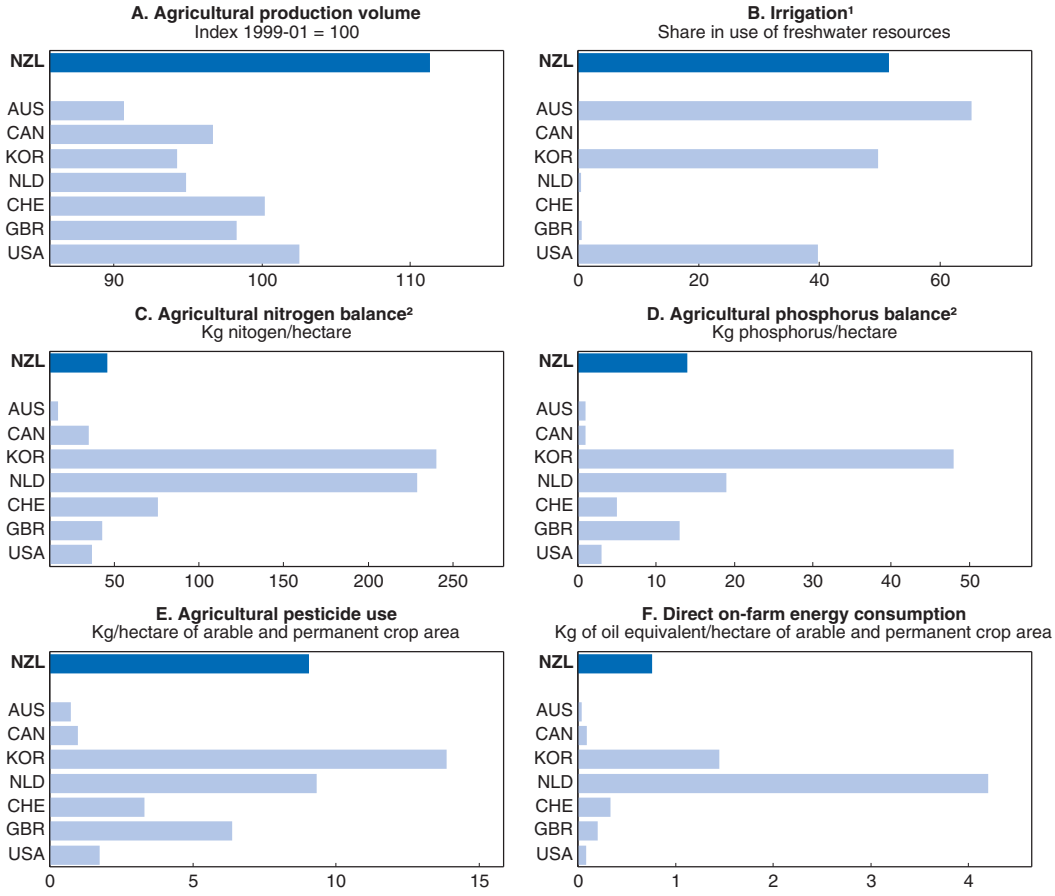
Water quality is likewise at stake. Nitrogenous effluent from agricultural fertiliser and animal urine seeps through the earth and into surrounding lakes and rivers where it nourishes the growth of algae, which in turn diminishes the quality and aesthetic value of the lakes, while harbouring waterborne diseases. Biodiversity is harmed, as the same nitrogen leaching causes eutrophication of waterways. The impairment of water flow in rivers and of aquifer levels during droughts and increased abstractions from irrigation systems has exacerbated such quality problems insofar as the absorptive capacity of the water decreases. Urban waste water, if not properly treated, may also seep into water tables. Recreational water uses that are fundamental to the tourist industry and vaunted NZ lifestyle alike increasingly collide with agricultural and community uses. Even so, New Zealand's agricultural nitrogen balance, while deteriorating, is still much lower than many other OECD countries on account of the extensive pastoralism practiced and the absence of input subsidies (Figure 4.2).

Agricultural water use

The devolution of powers under the RMA and LGA to territorial and regional levels means that different approaches have been adopted for allocating water. In agriculture, the first come, first served approach to water allocation is used by almost all regional councils and works well in those catchments where water is plentiful but is less efficient where limits are being reached. A system of water consents' under the RMA enables farmers to extract specified quantities of water for agricultural purposes for varying durations up to a maximum 35 years, often for 15 years, with no automatic right of renewal but applications from prior consent holders do go to the head of the queue for reconsenting. Indeed, there is often a presumption of renewal if significant investments in water infrastructure have been made. The role of irrigation has shifted from drought-proofing to a means of diversifying

Figure 4.2. **Selected agricultural indicators**

2002-04 average or three latest available years



1. 2006 or latest available year.
2. Balance between the quantities of nitrogen/phosphorus inputs (*e.g.* fertilisers) into, and outputs (*e.g.* crops, pasture) from farming.

Source: OECD.stat and OECD (2008), *Environmental Performance of Agriculture in OECD Countries Since 1990*.

StatLink http://dx.doi.org/10.1787/888932400095

agricultural production. Thus, consents enable farmers to change the nature of production, notably from sheep grazing to arable farming or to dairy. However, the consents are often attached to the property and can be traded only with difficulty unless explicitly provided for by the council in regional plans.[3] Water rights can sometimes be rented for a time, such as during periods of drought. This means that one does not observe prices for agricultural water in New Zealand. Nevertheless, in regions where water has become scarce, a positive shadow price must exist. In such cases, the sale price of property embodies the scale and duration of the water consents attached to it.[4] Property valuations for tax (council rate) purposes may also reflect this shadow price insofar as they reflect the full value of the farm (discounting the present value of extra net farm income due to the consent).

The main economic impacts from the current resource consent process are that: *a*) water is not necessarily going to its highest valued use; and *b*) in areas where demand outstrips supply, some highly valued community uses (such as domestic water supply) can face a lack of availability because of existing allocations to other uses. The volume of rural water abstraction is limited only by minimum water flow levels per unit period and over

time, and actual use is not measured. Minimum water flows themselves are poorly and inconsistently defined and enforced, due to the basic lack of national measurement and quality standards. Some farmer groups have vigorously resisted efforts at water abstraction measurement as a prelude to charging, which would not only raise their production costs but also reduce the value of their land, even if it would yield obvious efficiency and distributional gains. The need to measure water use and quality as a condition for better management is receiving high-level attention (Box 4.2). Water metering regulations were introduced in 2010 and will be phased in over the next few years, beginning with the largest takes.

Box 4.2. **Evolving NPSs and NESs for water**

Many New Zealanders do not understand the limits of water resources because information about how much water they use is incomplete. It is the task of central government to establish long needed National Policy Statements (NPSs) and National Environmental Standards (NESs) for water. These could help fill such information gaps and provide guidelines to local government as they implement water policies. New Zealand has an NES for ecological flows and water levels under development, but no specific standard for freshwater quality *per se*. It also has an NES for Sources of Human Drinking Water 2007. The Ministry for the Environment is investigating how to strengthen its role in monitoring the implementation of NESs. An NPS for freshwater management was submitted to an appointed Board of Inquiry in 2008, with the policy intent to improve water quality, including by managing allocation and contamination, and protecting wetlands. In January 2010 the Board reported back to the Minister recommending an alternative (stronger) NPS. A Land and Water Forum has been set up to engage stakeholders and communities in the design of the new policy under the Fresh Start for Freshwater Programme (FSFP) (Land and Water Forum, 2010). The FSFP includes projects on how to develop options to ensure information reported at all levels is collected in a consistent and dependable way, in order to allow better management decisions. The Forum called for more government investment in water research in order to deliver both the knowledge and the tools required by decision makers. Some preliminary thinking has also been undertaken by the Forum on various options for water pricing. However, no decisions have yet been made about either pricing or the system of local rates.

The 2005 RMA amendments were intended to provide regional councils with more flexibility in how they allocate water. This included allocation amongst competing uses and transfer of water use rights (within individual catchments). This new flexibility is hardly being used, however, suggesting that incentive structures facing local governments, rather than the institutional framework *per se*, are the problem. Some regional councils are seeking to incorporate different approaches in their next round of planning to encourage flexibility and/or transferability, although many are not. Reasons cited are the risks of costly legal challenges, public acceptability issues and the current structure of water permits. Apparently, local development and property interests still take priority over the environment in much local decision-making. In regions where farm interests may be pitted against environmental interests – notably in Canterbury with a more balanced urban-rural population split than elsewhere – decision gridlock can occur. The exceptional case where market mechanisms have been applied, namely in the Lake Taupo catchment, was the result of the unusual leadership, capacity and foresight of the regional council, as well as special geological circumstances (Box 4.3). Also adversely affecting both water- and

Box 4.3. **Nutrient trading in the Lake Taupo area**

The origin of nutrient trading

Following over 20 years of scientific research, it was concluded that Lake Taupo, the largest lake in the Southern hemisphere and a major NZ tourist attraction, was in danger of degradation mainly due to diffuse unseen inflows of agricultural effluent and to a lesser extent urban sewage, even though water in the lake is still regarded as almost pristine. A key factor in the risk of future deterioration was the type of subsoil in the region, made of volcanic pumice stone, which is porous and uneven, greatly facilitating the flow of nitrates from the soil into the lake, but with very long lags before the full effects become apparent. The severe winters in the region also make for accelerated effluent flows during the long months of no grass cover. As the pristine blue quality of the lake has an almost iconic status and lies at the heart of a booming regional economy with a significant tourist sector, the decision was made some eight years ago to implement trading in nitrogen pollution rights, with an initial free allocation of permits made on the basis of the last five years' average nitrogen emissions, serving as a firm cap: new entrants or those wishing to expand their production would have to buy existing permits from (initially grandfathered) holders.

This economic intervention was supported by the introduction of a regulatory requirement for all farms in the catchment area to have a resource consent to farm that limits and controls the maximum amount of nitrogen each farm can emit. This is assessed by Environment Waikato (the regional council for the catchment) working with farmers and assessing nitrogen emissions using stock numbers, stock type and various other parameters that are the passed through a computer modelling tool to provide a maximum nitrogen benchmark level that has to be met. This is the first time for New Zealand that this type of regulatory approach has been used.

Initially there was fierce opposition from the farmers, which was driven in part by a perception that nutrient caps would limit the potential for land-use conversion to dairy, thereby lowering property values. They were likewise slow to accept the linkage between their farming activity and leaching into the lake, especially when found at some distance from the farm. The only way to establish the linkage was via scientific modelling. In the end, a compromise was reached. Following a decision by the Environmental Court on an appeal filed by local farmers, each farmer was given a top-up equivalent to the gap between his/her own year peak and the average during the five-year period (thereby rewarding heavy polluters). Farmers, as traders, have adjusted surprisingly rapidly to the new regime, although they have preferred dealing in face-to-face markets, rather than the internet-based trading that had been initially established.

The Lake Taupo Trust

A target of a 20% reduction in nitrogen leaching by 2018 (153 tonnes annually) was also set as necessary to maintain the lake's existing water quality and to reduce the effect of predicted future higher nitrogen flows. As the last five years' average cap on the number of allocated permits (plus top-ups) greatly exceeded this target, another mechanism had to be pursued. Thus, in 2003 the Lake Taupo Trust was set up in order to achieve this reduction by various means, including purchasing farms and on-selling with nitrogen restrictions in place or agreeing with landowners on permanent reductions in nitrogen which would then be compensated by the Trust. In both cases nitrogen reductions are secured by contracts and land covenants lasting 999 years. The Trust was funded 40% and 60% by national and regional/local governments, respectively, in the total amount of NZD 81 million, which in turn was calculated as the targeted reduction in nitrogen emissions, divided by per hectare average emissions intensity (sheep, dairy or forested

Box 4.3. **Nutrient trading in the Lake Taupo area** *(cont.)*

land emitting, respectively, 15, 35 and 3 kg per hectare), times the average price of a hectare of farmland, which around eight years ago was NZD 5 000.

Around the same time, however, there was an emerging bubble in global dairy prices, which greatly increased the return to dairying and encouraged conversions from sheep and beef farming (which had been the prevalent mode of production, given the type of soil and climate) to dairying. This had two seriously adverse impacts on the ability to achieve the objectives of the programme: *i*) the average price of farmland shot up to NZD 15 000 per hectare and that for dairy farms to NZD 35 000 per hectare (beef and sheep farm land values also appreciated due to substitution effects); and *ii*) the amount of nitrogen emissions per hectare of farmland was increasing due to the effect of the more nitrogen-intensive dairying. The upshot was that the Trust would have needed a significant boost to its resources, which was neither foreseen nor planned.

The saviour of the programme appeared unexpectedly in the form of the emissions trading scheme (ETS). The Trust was able to leverage ETS forestry credits into target-compatible nitrogen emissions reductions using only its limited budget, in the following way. Major GHG emitters in the region were keen to establish their green credentials but also to lock in a long-term GHG emissions permit price upon their entry into the ETS in 2010. The Trust brokered innovative agreements between farmers and such companies, who agreed to an attractive long-term price (including a security premium) for ETS credits that are generated by the partial conversion of farms into forest cover. This has most often occurred in beef and sheep farms, which tend to have less productive (usually hilly) land suitable for forestry. The Trust then paid farmers for the reduction in nitrogen emissions, at the same time that they were receiving income from forestry credits. The monetary gains to farmers were significant, while allowing them to continue farming as a profession and also diversify their risk by becoming part-time foresters. Economic efficiency is being served insofar as a natural asset has been given a value in a way that tips the balance in favour of less polluting land uses. Using these techniques the Trust has been able to achieve over 66% of its target over a very short period of time.

Environment Waikato is now looking at further applications of these approaches in the region. It could serve as leader in market mechanisms to maximise the benefits and synergy between controlled forestry on more marginal agricultural land where benefits of conversion to forestry could not only provide environmental benefits but also a higher economic return to farmers. As all these schemes involve new plantings and considerable initial expenditure they are heavily dependent on the long-run viability of the ETS. It is crucial that the government make a firm commitment at the next review to maintain the scheme independent of other countries' actions.

The role of Māori

Section 6 of the RMA outlines matters of national importance that must be recognised in respect of water allocation including "the relationship of Māori and their culture and traditions with their […] water […] and other taonga ('tangible or intangible treasures of great value')". Lake Taupo holds special significance for "Iwi with tangata whenua" ("people of the land") in the catchment. The first joint agreement involving carbon and nitrogen was completed among the Trust, Mighty River Power and Puketapu and Oraukura Māori Authorities in March 2010. This agreement achieved a reduction in nitrogen of 22 000 kg through conversion of 550 ha of land to forestry and by major changes to farming practices involving holding stock numbers and wintering animals outside the catchment. Since both custom and law governing Māori land inihibit Māori land being sold (although

Box 4.3. **Nutrient trading in the Lake Taupo area** *(cont.)*

it can be bought), such co-management regimes may be well suited to the values of water and guardianship attributed to them under the RMA.

Allocation of water rights is complex and of particular concern to Māori, who have not yet developed much of their agricultural land, as it is being progressively acquired under treaty settlements, which have greatly accelerated under the present government. They therefore stand to receive only limited allocations of the right to pollute/produce if allocations are made on a historical output basis, effectively cutting off the prospect of development. This suggests that a means of compensating for loss of land value other than grandfathering may need to be found. Simple water-quality trading, *e.g.* using proxies such as livestock densities and nutrient surplus at the farm level, has potential as a transfer mechanism. The auctioning of water rights may be the most efficient way forward (Business NZ, 2010).

Source: Information largely based on discussions with Graeme Fleming, CEO, Lake Taupo Trust.

land-use allocations is the lack of incentives for efficiency in processing consents, which however was addressed by the 2009 RMA amendments.

A particular concern relates to the difficulty in obtaining consents for new water storage facilities.[5] Storage is being promoted as a win-win solution for agriculture. It is argued that the major explanation for inefficient water use is the uncertainty associated with its availability. A farmer is likely to use water up to his or her entire allocation unnecessarily, merely as a precaution against possible future shortages. Storage would serve a variety of interests: *i*) farmers would be more willing to pay for water if it comes with greater reliability of supply; *ii*) environmentalists may be coming round to the idea that "ruining" one river in the catchment by building a new dam and storing diverted water in a reservoir could improve the quality of all the other rivers by creating greater stability of flow and hence greater water volumes and lower pollutant concentrations; and *iii*) power companies may help in funding insofar as a new hydro plant could piggy-back on a new dam, which would also reduce GHG emissions.[6] One project, the Opuha dam, has also shown that economic efficiency can be served by issuing a single consent at the level of the irrigation company – obviating the need to issue many small consents with a vast saving in administration – while shareholders in the company trade water under the global consented cap, allowing it to be channelled to its most efficient uses. Nonetheless, there may be unknown long-run environmental effects of building new dams. Also, by facilitating the expansion of dairy production and resulting methane and nitrous oxide emissions, extra storage may be incompatible with Kyoto targets. To that extent, the feasibility of new storage dams may depend on the uncertain emergence of new agricultural GHG mitigation technologies.

Urban water use

Urban and industrial water use is currently charged by either volume (targeted user charges) or rating (either a flat rate or using land value as a proxy), with the exact mechanism decided by local councils. The water charges are earmarked to funding new and maintaining existing infrastructure. Targeted user charges are primarily promoted to encourage water conservation and so minimise infrastructure costs, rather than to serve environmental goals *per se*. However, experience in Auckland indicates that the installation of meters, even with subsequent changes in pricing, has had little effect on consumption

behaviour. Price changes have been modest and incremental, as there has been little political will to impose higher water charges in the context of higher rates and council charges for a number of services. There may be a need to bring urban water management under the jurisdiction of the RMA, so as to ensure the environmental integrity of urban and infrastructure planning. This is in fact the intention of the so-called Phase II RMA reform currently under discussion.

Marine and coastal resources

New Zealand's long coastline and vast Exclusive Economic Zone make coastal and marine resource management of critical importance. The 2004 Foreshore and Seabed Act was until recently the governing framework for access rights to shore and seabed (it nationalised them). This Act has recently been replaced by the Marine and Coastal Areas Act 2011 to better accommodate obligations to Māori under the Treaty of Waitangi. The new draft has given rise to controversy, as Māori have the possibility of property rights attached to sacred spaces and customary usage being recognised. The NZ public is accustomed to unrestricted access to beaches and shores, even on private property, via easement and other rules. This access is to be protected under the Marine and Coastal Areas Bill. In the fisheries sector, New Zealand: does not provide any trade-distorting or environmentally harmful subsidies; is a leading advocate for elimination of fisheries subsidies in the WTO; and since 1986 has had in place a highly successful and widely copied quota-trading system for sustainable fisheries management. An interesting outcome of this system has been the spontaneous emergence of new derivative products based on the primary quota-trading market, adding to its overall efficiency.

Waste management

Management strategies for hazardous waste, solid and liquid waste treatment and disposal, and recycling/recovery are driven by a range of legislation. The 2008 Waste Minimisation Act provided a new range of tools including a national levy (user charge) of NZD 10 per tonne (+ GST) on all waste disposed of in landfills, and a requirement for territorial authorities (cities and district councils) to draw up waste management and minimisation plans. The Act has changed price signals associated with waste disposal and has thus increased internalisation of environmental objectives, though the levy is not presumed to fully reflect the external costs that disposal imposes on the environment, society and the economy and was primarily designed to generate funding to help local government, communities and business reduce the quantity of waste. A user-pay approach is becoming more common throughout the country. In most districts households are charged for waste services on a fully or partially user-pays system; very few authorities still use a fully general ratepayer-funded approach.

The RMA governs land contamination from waste activities, although hazardous-substance management is also governed by the Hazardous Substances and New Organisms Act. Discharges into the environment such as from waste disposal are controlled by regional councils. Land-use activities, such as the location of facilities for hazardous waste, are controlled by the territorial authorities. The RMA does not contain any explicit pricing mechanism to internalise environmental objectives in this area but does not rule out their development at the local level. As with water, the current framework is mainly command and control, nevertheless. There has been a welcome trend toward increased access for the community to information on potentially contaminated sites. This can raise awareness

amongst purchasers and others who may face liability and resale issues. Funding is also being provided by the central government to assist in clean up.

The NZ ETS (see below) calls for voluntary reporting of methane emissions from waste disposed of in municipal landfills and full obligations for landfill operators to surrender units (NZUs) as of 2013. It is expected that the cost of these units will be passed to customers through increased prices for waste disposal. Internalisation of the carbon cost will encourage landfill operators to install and operate efficiently any landfill gas-collection system and to separate organic from non-organic waste. It is unclear if the waste-disposal levy will be retained once the ETS is operative in the sector, or if it will be needed. The new EPA is best placed to administer the Waste Management Act as it already has been given responsibilities for the Hazardous Substances and New Organisms Act and for the ETS (PCE, 2011). This would allow for a coherent approach to interlinked policies of national significance.

Biodiversity and the quality of ecosystems

New Zealand boasts unique and remarkable flora and fauna that emerged from its long geological isolation from the rest of the world. The two major waves of human settlement (Māori and European) originally caused major (over 90%) loss of indigenous forests and wetland ecosystems, habitats and species, which continues with economic development to this day, if less dramatically.[7] The more immediate menace arises from expanding trade in goods by ocean shipping and the movement of people via tourism and immigration, which have led, at an accelerating rate, to the introduction of non-native species: possum, rats, rabbits, deer, various pests and weeds, and these have expanded rapidly because of the lack of natural predators. Biosecurity is of great concern, since any new pest or disease could potentially have a huge effect on the biosystem and economy. The government has stepped up border inspections of goods and people and made fines more dissuasive.

There is also a major role for conservation strategies. The protection of biodiversity on public land is governed by the Department of Conservation (DoC), and on private land, by the RMA.[8] New Zealand faces its main challenges in monitoring the drivers of pressures on biodiversity on private land. A main instrument of conservation on private land has been the negotiation of conservation trusts, involving monetary compensation for activities like trapping and poisoning invasive species or keeping them out by fencing, restoration of aquatic ecosystems (*e.g.* wetlands, ponds) and tree plantings in flood plains. Greater government monitoring of such voluntary efforts may nevertheless be required. An NPS on Indigenous Biodiversity is currently under development. A new reporting system is being put in place to greatly improve the quality of monitoring (pest and weed pressure levels, the condition and evolution of natural lands, and effectiveness of interventions), though more metrics and indicators may be needed. The public good value of biodiversity is often undervalued in the market, and the OECD is looking into possible economic instruments to correct this failure (OECD, 2011).

The government has reopened the sensitive issue of exploiting mineral resources on public land. According to the new plans, the DoC must share responsibility with the Ministry of Economic Development (MED) for granting mining access rights to conservation land.[9] As the DoC has full accountability for the environmental integrity of such land and the MED issues all mining permits in the country, but primarily within a development perspective, there is a question of a conflict of interest and a possible weakening of the DoC in the new arrangement. Mining has also been put on a more privileged level than other commercial activities on public land. Commercial activity is flatly denied access if it in any

way compromises environmental objectives, whereas mining activity can proceed only "with regard to" these same objectives. Assuming that projects go ahead – and this would be on the basis of a national interest cost/benefit analysis including environmental and economic considerations (Box 4.4) – the issue of public recapture of some of the associated rents becomes relevant and is two-fold. First, the royalties charged for taking the minerals (which belong to the public) are extremely low in New Zealand. Second, charges for access to conservation land (as distinct from taking the minerals out of the ground) should be levied at a high enough level to provide (along with negotiated remedial activities) a net benefit to the environment, notably to allow the DoC to improve its surveillance and research activities (PCE, 2010a).

Box 4.4. **Untapped mineral wealth**

New Zealand sits atop significant mineral wealth, including major coal reserves (that in terms of energy content per capita are larger than Saudi Arabia's oil reserves), as well as offshore oil and gas. Coal exports have increased dramatically in recent years, though in the future will be disadvantaged by carbon pricing policies. Rare earths are also to be found. At current rates of production most reserves should last decades if not centuries. Most resources lie under Crown-held land, and any gold, silver, uranium or oil lying under private land is declared to be Crown property as well. New Zealand's exclusive economic zone (EEZ) covering 4.3 million km^2 of surrounding ocean, some 15 times its land size, is the fifth largest such zone in the world, most of it unexplored and very deep. A recent study concluded that the production of oil and gas, metals, industrial (non-metallic) minerals and coal could be much greater than at present if it were properly developed, helping to deliver improved export performance and more efficient support to other industrial sectors, in turn significantly boosting long-run potential GDP (Barker, 2008). More R&D is needed to upgrade industrial minerals and find global markets for downstream products (as was done successfully for fine china clay). Whereas exploration activity has increased worldwide, given increased demand and rising minerals prices, in New Zealand the rate of expenditure on exploration has been declining. According to a recent global ranking of mining policy attractiveness, in 2010 New Zealand ranked 26th out of 79 jurisdictions, up significantly from 45th place (out of 71) in 2008, with Alberta, Nevada, and Saskatchewan the top three (McMahon and Cervantes, 2011).

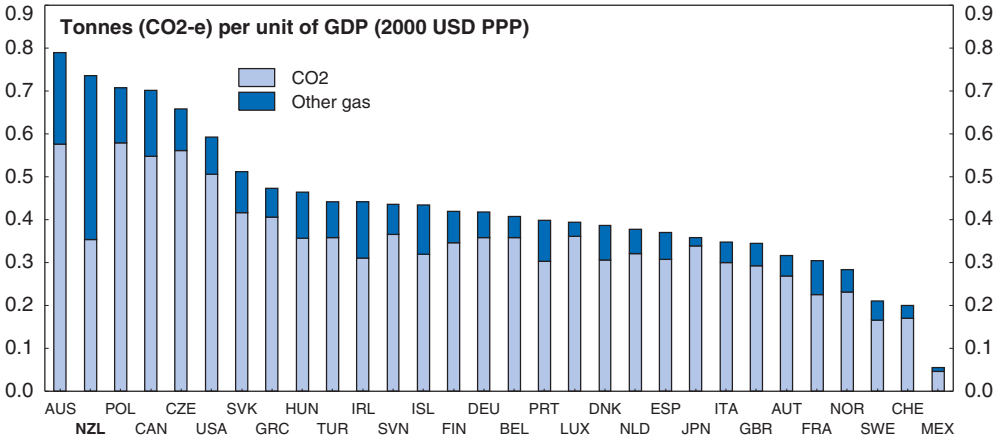
Climate protection

New Zealand's emissions profile

New Zealand is a heavy GHG emitter in relative terms, ranking second only to Australia among OECD countries in its output intensity of emissions (Figure 4.3), and it is the 12th highest per capita emitter in the world. In absolute terms, New Zealand contributed 0.4% of total Annex 1 emissions in 2008 (including those by economies in transition). Its emissions profile is very different from that of the average OECD country. Because of its unusually large economic weight, agriculture accounts for almost half of total emissions compared with 10% or less in other Kyoto Annex 1 countries, with correspondingly larger shares of methane and nitrous oxide (the main by-products of agriculture) in emitted GHGs (Figure 4.4). Elsewhere in the OECD, energy and carbon dioxide emanating from fossil fuel-based energy use dominate. New Zealand's total emissions trend is also subject to greater fluctuations than elsewhere in the developed

Figure 4.3. **GHG-emissions intensity excluding LULUCF**

Gross emissions, 2008 or latest available year



StatLink http://dx.doi.org/10.1787/888932400114

world, mainly reflecting its vulnerability to weather patterns, notably drought, which increases the proportion of non-renewable electricity generation, affecting CO_2 emissions, and decreases agricultural productivity and livestock numbers, leading to corresponding declines in nitrous oxide and methane emissions (MfE, 2010). Finally, New Zealand makes far greater use of forest sinks to capture carbon, which offset nearly 40% of its agricultural and industrial emissions. Other Annex 1 countries offset only a small amount, and in this respect New Zealand is much more similar to many developing countries.

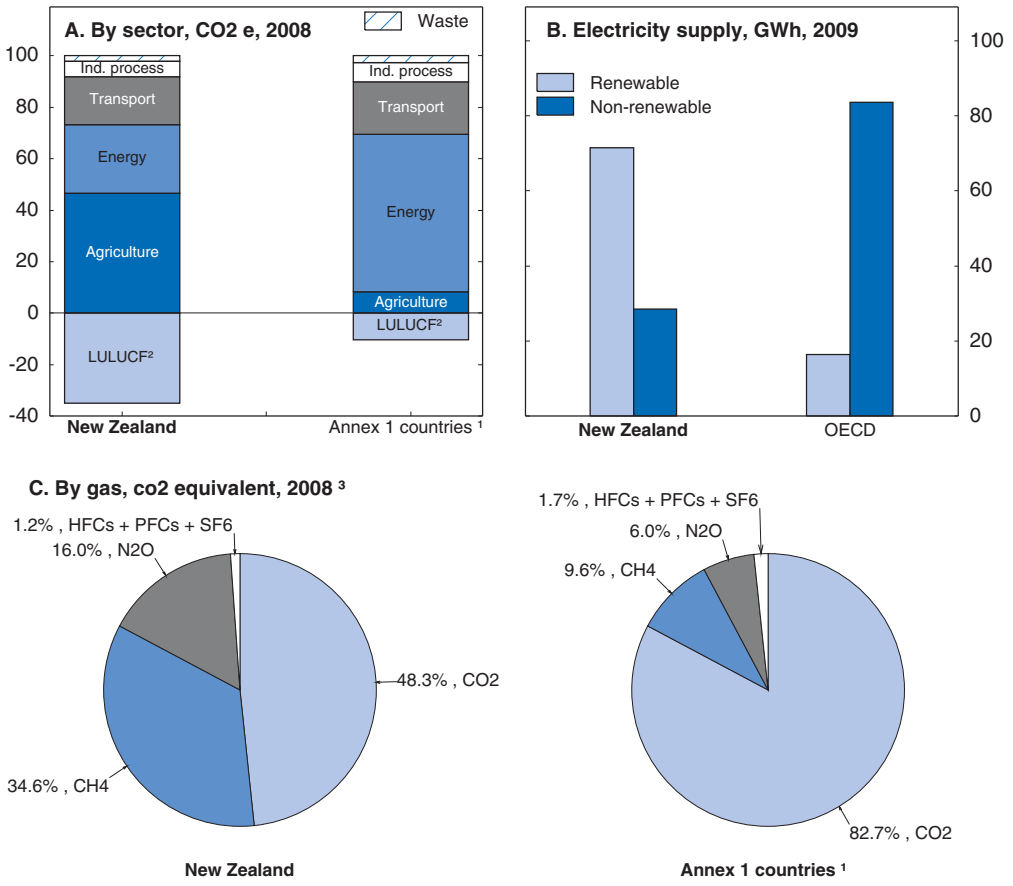
New Zealand faces particular challenges in reducing its total greenhouse gas emissions and its emissions intensity. Agricultural emissions reflect methane, produced by enteric fermentation (ruminant belching) and nitrous oxide, released by nitrogen-based chemicals and animal waste (partly as ammonia) into agricultural soils (Figure 4.5). The relatively high proportion of methane reflects the country's comparative advantage in intensive pastoral farming. However, there is no cost-effective way to substantially mitigate methane emissions. While a technology exists to control nitrous oxide emissions, so-called nitrification inhibitors, these may not be economically viable except on very intensive farms, though there is some debate (see below).

In the energy sector, emissions are relatively low but rising fast, mainly because of growing electricity use and automobile transport. Factors like low fuel excise taxes, an old car fleet, one of the OECD's highest car ownership rates, underuse of road charging and inadequate public transport infrastructure all make transport in New Zealand relatively carbon intensive. New Zealand is moreover experiencing substantial population growth by OECD standards. Policies could still help encourage mitigation opportunities, though they are hampered by New Zealand's low population density and geographic isolation. Demand for car transport tends to be relatively inelastic with respect to price. The population has grown by 25% between 1990 and 2007, the second highest rate amongst Annex 1 countries. The dispersal of the currently small population (just 4.4 million) and over an area similar in scale to countries with much larger populations (such as Britain or Japan), also reduces the potential for economies of scale and makes addressing transport emissions complex.

Electricity generation is already relatively "clean", with about 70% produced from non-emitting sources, mostly hydro, but also some geothermal; nuclear energy is not used

Figure 4.4. **GHG emissions profiles**

Percentage of total



1. UNFCCC Annex 1 includes OECD and and Eastern European countries but where OECD excludes Chile, Israel, Korea and Mexico. (see Annex 1 at *http://unfccc.int/essential_background/convention/background/items/2853.php*).
2. Land use, land use change and forestry.
3. CO_2: carbon dioxide; CH_4: methane; N_2O: nitrous oxide; SF_6: sulphur hexafluoride; PFCs: perfluorocarbons; HFCs: hydrofluorocarbons, all non-CO_2 gases converted to CO_2 equivalents.

Source: Ministry for the Environment (2010), *New Zealand's GHG Inventory 1990-2008* and *United Nations Framework Convention on Climate Change* and *International Energy Agency Database*.

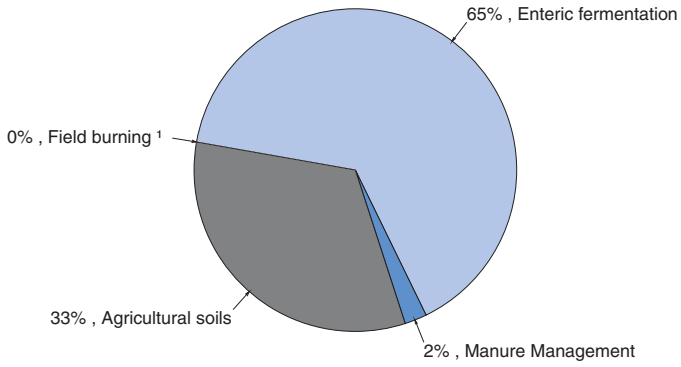
StatLink http://dx.doi.org/10.1787/888932400133

and has little public support[10] (Figure 4.4, Panel B). Whilst positive for New Zealand's total emissions profile, this reduces the potential to reduce emissions in future through fuel switching at reasonable cost. Nevertheless, there is expanding interest in geothermal, solar, wind and ocean-wave power despite the lack of subsidies of the sort as offered in many other OECD countries. Also, the access to forestry offsets compensates, at least for a time, for the relative lack of abatement opportunities in electricity compared with other Annex 1 countries.

Meeting Kyoto obligations

Under the Kyoto Protocol, New Zealand is committed to return its annual GHG emissions to 1990 levels during the first commitment period CP1 (2008-12) by reducing emissions, using emission credits from its post-1989 forests or buying international allowances (AAUs) or project-based credits (CERs/ERUs) on the international market. The

Figure 4.5. **GHG emissions in agriculture**
2008, Carbon dioxide equivalents



1. Field burning of agricultural residuals and prescribed burning of savannas (negligible).

Source: Ministry for the Environment (2010), *New Zealand's Greenhouse Gas Inventory 2000-2008.*

StatLink http://dx.doi.org/10.1787/888932400152

NZ Emissions Trading System (NZ ETS), which came into effect in 2008, will be New Zealand's main policy tool to deliver on its international commitments. At the 2009 UN climate change conference in Copenhagen, New Zealand pledged a conditional target of 10-20% reduction from 1990 levels by 2020. However, the hoped for international agreement providing clarity on a post-2012 framework, including a Kyoto second commitment period (CP2, 2013-20), has not yet been reached. Like some other countries' commitments, New Zealand's is contingent on comparable efforts by other countries and on some other conditions relating to forestry accounting rules.

In 2008, New Zealand's GHG emissions as accounted under the Kyoto Protocol were 59.2 million tonnes CO_2-e, compared with 60.8 Mt CO_2-e gross emissions in 1990. Excluding net forestry removals under the Kyoto Protocol, New Zealand's gross emissions in 2008 were 23% above their 1990 level. This increase (the third highest in percentage terms in the OECD) was mainly accounted for by the energy sector, where emissions growth was three times greater than that in agriculture (the two sectors together accounting for 90% of total NZ emissions) and largely caused by increased use of motor vehicles and electricity generation (Table 4.1). Emissions peaked in 2007, coming down in 2008 as drought cut agricultural output and the economic recession reduced industrial and road transport emissions of carbon dioxide, with a partial offset from increased use of coal in power generation due to the drought. Also, with the entry of forestry into the ETS in 2008, deforestation (not shown in Table 4.1) began to reverse in that year.

Under internationally agreed Kyoto (as opposed to national) accounting rules for purposes of CP1, the government's projections for 2008-12 show the country to be in net surplus *vis-à-vis* the Kyoto target, so that it can meet its CP1 target through "own reductions" with no need to buy offsets abroad (Table 4.2). Though the ETS price signal is too weak to put much of a dent in gross emission rates during CP1, and average gross emissions in 2012 would still be 22% above their level in 1990, this gap will be more than offset by forest plantings (net of deforestations) since 2008, which have been supported by the ETS.[11] However, decisions by NZ ETS participants, *e.g.* foresters exporting their units as

Table 4.1. **Trends in gross GHG emissions, 1990-2008**

	Emissions (Mt CO_2 equivalent)			Change (per cent)		
	1990	2007	2008	1990/2007	2007/08	1990/2008
By gas						
CO_2	24.9	35.2	36.1	41.5	2.4	44.9
CH_4	25.5	26.4	25.8	3.7	–2.2	1.4
N_2O	9.8	12.1	11.9	23.7	–1.5	21.8
HFCS	–	0.9	0.8	n.a.	–5.1	n.a.
PFCs	0.6	0.04	0.04	–93.4	–7.0	–93.8
SF_6	0.02	0.02	0.02	–3.3	–1.4	–4.6
Total	60.8	74.7	74.7	22.9	–0.1	22.8
By source						
Energy use[1]	23.0	32.7	33.8	41.7	3.6	46.9
Industrial processes and solvents	3.4	4.6	4.3	35.5	–6.9	26.1
Agriculture	31.9	35.6	34.8	11.7	–2.2	9.3
Waste	2.4	1.8	1.7	–25.3	–8.3	–31.5
Gross emissions	60.8	74.7	74.7	22.9	–0.1	22.8

1. Includes transport, thermal electricity generation and manufacturing and construction.
Source: Ministry for the Environment, *New Zealand's Greenhouse Gas Inventory 1990-2008*.

Table 4.2. **Projections of net emissions and Kyoto accounts, 2008-12**

	Emissions (millions of tonnes of CO_2 equivalent)					
	2008	2009	2010	2011	2012	Total
Energy (including transport)	34.3	31.5	32.8	32.8	32.9	164.3
Stationary energy	20.7	18.2	19.4	19.2	19.1	96.6
Transport energy	13.6	13.3	13.5	13.6	13.8	67.8
Industrial process and solvents	3.9	4.0	4.2	4.3	4.3	20.7
Agriculture	34.5	34.5	35.5	36.2	36.9	177.6
Waste	1.7	1.6	1.6	1.6	1.6	8.2
Forestry						
Gross removals	–17.5	–17.6	–17.8	–18.0	–18.3	–89.1
Deforestation	2.4	2.4	1.5	1.5	1.5	9.2
Net removals	–15.1	–15.2	–16.3	–16.5	–16.8	–79.9
Total	**59.2**	**56.5**	**57.94**	**58.0**	**59.0**	**291.0**
Kyoto accounts						
Initial Kyoto Assigned Amount Units (AAU)						309.6
Less: Net transfers of AAUs						–2.1
Kyoto Protocol Units projected to be granted						–5.1
Total net emissions						–291.0
Equals: New Zealand's projected net position						+11.4

Note: Forestry figures in this table refer to net emissions and removals under Article 3.3 of the Kyoto Protocol, which excludes continuing removal, but includes deforestation, activity of pre-1989 forests. Positive numbers refer to emissions of greenhouse gases, and negative numbers refer to removals/sequestration of greenhouse gases. Initial AAUs equals the level of 1990 emissions times 5.
Source: Ministry for the Environment (2010), Net Position Report, 15 November.

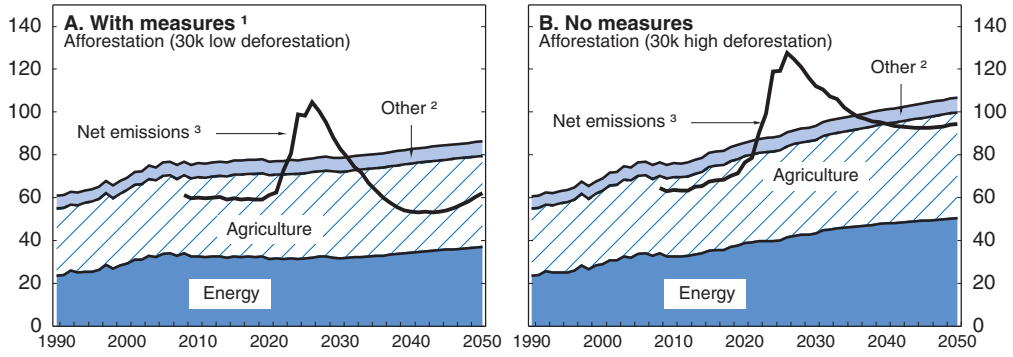
Assigned Amount Units (AAUs) or greater deforestation/fewer plantings, could reduce New Zealand's overall headroom.

Depending on the nature of the post-2012 framework, the 2020 target may have to be met using a mixture of own reductions and forestry via the ETS and purchases of emissions credits abroad. However, the policy challenges are significant. Any credible international

agreement is likely to require more stringent global 2020 targets than put forth heretofore. According to OECD analysis, the set of national targets tabled at Copenhagen will not be sufficient to reach the 2050 Kyoto goal of keeping atmospheric GHG concentrations to 450 parts per million, even at the ambitious end of target ranges (Dellink *et al.*, 2010). A failure to tighten emission reduction targets during CP2 would imply greater efforts after 2020. Also, the lifetime of a plantation forest being about 30 years, the maturation and harvesting of the forests planted since 1990 (and which are now being encouraged by incentives in the NZ ETS) will produce a sharp rise in NZ net emissions starting around 2020 and spiking around 2030. This highlights the fact that plantation forest sinks are not a permanent solution (OECD, 2007), though increased forest establishment, and the storage of carbon in wood products, will lower atmospheric carbon over the long run. The projected peak in forestry liabilities around 2030 will sharply widen the emissions gap (Figure 4.6). This consideration implies that New Zealand will have to focus on reducing gross emissions, which are generated primarily by energy use and agriculture, supplemented if need be by accessing abatement options through the international carbon market.

Figure 4.6. **New Zealand's projected emissions through 2050**

Millions tonnes of carbon dioxide equivalent



1. The with-measures case is derived as follows: 1) Economic growth is based on the Treasury's Long Term Fiscal Modelling; 2) New Zealand's population reaches 5.5 million by 2050; 3) Historical rates of energy-efficiency improvements continue; 4) A carbon price of NZD 25 per tonne to 2013 and NZD 50 per tonne to 2050; 5) Oil prices reach USD 129 barrel by 2030 (International Energy Agency's *World Energy Outlook* mid-case scenario).
2. Industrial processes and waste.
3. Includes removal from post-1989 afforestation; excludes pre-1990 forest removals according to Kyoto forest definitions. Kyoto accounting only strictly applies for the period 2008-12.

Source: Ministry for the Environment.

StatLink http://dx.doi.org/10.1787/888932400171

The current NZ ETS

System overview

The NZ ETS is a bold initiative by the government to proceed with a market-based, economy-wide approach to meeting its international obligations. Due to the fact that major trading partners have not introduced such schemes and with concerns amplified by the current economic situation, the ETS has been modified from its original (2008) version to: i) phase in the full carbon price signal for energy and industrial processes more slowly while further delaying the entry for agriculture to allow more time for sectoral adjustments; ii) move to an uncapped, intensity-based system of free allocations to shield trade-exposed heavy industry and agriculture from carbon leakage and competitiveness losses, which will greatly increase the level of allocations to those qualifying (Box 4.5).[12]

Box 4.5. **The NZ ETS**

On ratification of the Kyoto Protocol in 2002, New Zealand developed a proposal for a carbon tax on fossil fuels, which was due to start in 2007 as the main policy tool underpinning its Kyoto obligations. However, in late 2005 the tax proposal was withdrawn, owing to concerns about the impact on industry and a lack of support in parliament. The alternative chosen was a broad based emissions-trading scheme, passed into legislation in 2008 and to be phased in over a period of several years. However, with a new government, which had campaigned on a promise to amend the ETS, a "moderated ETS" was passed in late 2009. It softened the price signal for emitters during a transition period, delayed the entry of agriculture and provided potentially long-lived allocations to emissions-intensive, internationally exposed sectors patterned on Australia's planned scheme (which itself has not been adopted). Key elements are:

- Obligations for the forestry sector began in January 2008 and those for stationary energy (electricity production, heating), transport fuels and industrial-process emissions (gold, aluminium, cement, clinker, etc.), in July 2010. Synthetic gases and waste will enter in January 2013 and agriculture in January 2015. Hence, all gases and sectors will be covered, even agriculture which is not included in emissions trading schemes in any other jurisdiction.
- Obligations are placed on emitters to surrender 1 eligible NZU (New Zealand unit) for every tonne of CO_2-e emitted. Where possible, obligations are set upstream – *e.g.* on fossil fuel suppliers/importers rather than end users. It is expected that, in most cases, the carbon price will be passed through by participants into energy and product prices, so that final users will face the full carbon price whereas upstream producers are the point of obligation. There are no limits on banking units, though borrowing from future periods is not possible.
- The scheme has strong links to international markets: participants can import and surrender eligible Kyoto units (CERs and ERUs), convert NZUs to AAUs and export, and the government has the power to accept units from other ETSs. There is no cap on the number of units the government may allocate: NZUs may be allocated without limit. However, there is a requirement for the NZ government to hold an AAU or other eligible Kyoto unit for every NZU it allocates or auctions. If the government allocates or auctions more NZUs than the AAUs and other Kyoto units it holds, it will need to purchase any shortfall.
- The price is capped at NZD 25 until the end of 2012 (see Hood, 2010). ETS participants have the option to buy NZUs at that price but can also buy units from international carbon markets. The current trading price of NZUs is about NZD 20, still below the price cap. In this sense the NZ ETS could be seen as a *de facto*, yet flexible, carbon price.
- A transition phase as from 1 July 2010 to 31 December 2012 consists of: a 50% obligation (*i.e.* to surrender only 1 unit for every 2 tonnes of CO_2-e emitted) for stationary energy, industrial processes and liquid fossil fuels; participants have the option to purchase units from the government at a fixed price of NZD 25 per unit; exports of units from non-forest sectors are not permitted for the duration of the transition period. Forestry continues to face the full carbon price signal and remains free to export units in exchange for AAUs.
- Temporarily free allocations will be made to firms conducting energy-intensive, trade-exposed (EITE) activities in industry and agriculture. This is designed to mitigate the cost increases associated with the ETS and avoid carbon leakage. There is no cap on the number of units that can be allocated; allocations will be made on an output-intensity basis: "moderately intensive" EITE sectors will receive 60%, and "highly intensive" ones and agriculture 90%, of the allocative baseline (equal to the average emissions intensity over the three financial years 2006/07, 2007/08, 2008/09) times the amount of output for a given year.

Box 4.5. **The NZ ETS** *(cont.)*

Starting in 2013 and 2016 for industry and agriculture, respectively, free allocations will be phased out by 1.3% of the level of assistance per year (the 2008 legislation had a much shorter phase-out at 8% per year, but starting from 2018). For equity reasons, and reflecting the fact that carbon leakage risks apply to new investment as well as existing capacity, new entrants conducting eligible activities will also qualify for allocations.

- Introducing a cap would alter incentives for new and expanded production. Under an intensity-based system of allocation firms face exactly the same carbon cost and incentives for each unit of production. Under a capped historical allocation, firms face higher costs for each additional unit of production over and above the historic year. However, as carbon leakage concerns apply equally to existing and new capacity, New Zealand has chosen not to differentiate the incentives between existing and new production.
- Owners of post-1989 (Kyoto) forests may opt in to the system, having until 2012 to decide and, if they do so, will receive credits for carbon-removal activities and must surrender units for deforestation. Opted out forests neither earn sequestration credits nor incur future liabilities. Due to Kyoto definitions, pre-1990 forests are not acknowledged as carbon sinks, and therefore owners of these forests cannot opt into the ETS and will receive no credits for any ongoing post-1989 removal activity. But, they will still have obligations for deforestation. This Kyoto treatment gave a marked incentive to de-forest trees planted pre-1990 in the period between the ratification of the Kyoto Protocol and forestry's entry into the ETS, *i.e.* 2002-08, and then heavily replant. A one-time compensation to pre-1990 forest holders for losses to the value of their property will be made in the form of free allocations for two years, totalling 21 million units.
- The scheme will be reviewed in 2011 and at least every five years.

The transitional measures blunt the carbon price signal, as some major emitters with the greatest likely abatement potential are exempted. During CP1, gross emissions will be reduced by only an expected 0.7% from business as usual projections, although the ETS will create an incentive for bigger reductions in gross emissions to 2020 and beyond if the scheme is implemented as currently legislated.

The NZ ETS is a solid basis upon which to build an efficient, fair and effective carbon pricing scheme, which the government has stated to be its goal. Indeed, the New Zealand experience may show that the "go slow" approach could be the best way to ensure political acceptability of an emissions trading scheme, thereby paving the way for its implementation. What may be more important right now is to provide correct incentives at the margin to habituate economic actors to the pricing of environmental consequences of their behaviour, rather than forcing major transitions. Nevertheless, the broader social acceptability and political durability of this highly complex new financial scheme and major economic reform will be an ongoing challenge.

The current ETS maintains some key attractive features of the founding 2008 legislation, namely an innovative and flexible approach to integrating with world carbon permit markets without the need for a cap on the allocation of permits, as supported in OECD (2009). This may give New Zealand more scope to expand its (efficient) agricultural sector in line with global food price signals. But eventually, the carbon price signal needs to be a disciplining tool. It should be applied equally across sectors to ensure that the lowest-cost abatements occur. The uncapped NZU (that is, emission permit) allocations to large industry and

agriculture, modelled on a former Australian scheme, significantly reduce the carbon price signal in the short term. Ultimately, a cap on emissions and NZUs that is consistent with New Zealand's post-2012 international commitments would need to be imposed if the ETS is to be an effective means of meeting those commitments.

The New Zealand government has launched a review of the NZ ETS this year. This review will consider how the design of the ETS should evolve beyond 2012. A key consideration is the continuing uncertainty about the future of the international framework. If there is a binding and ambitious Kyoto-style agreement, it may well become vital to strengthen the pricing signal and its efficient economy-wide incidence. However, if there is a weak framework, or continued uncertainty, it may be in New Zealand's interest to maintain flexibility. In this latter scenario, striking the right balance between short-term flexibility and long-term risk reduction will be critical.

The way forward

Macroeconomic, distributional and efficiency aspects

Competitiveness losses and leakage effects under the current ETS are intended to be reduced in the short-to-medium term by extensive free allocations to energy-intensive trade-exposed (EITE) industry and all of agriculture. But since the cost of free allocations is shifted to the general taxpayer, there is an efficiency cost of raising revenues, estimated at NZD 1.40 per NZD 1 (Kerr, 2009). An internal wealth transfer also takes place: households and small businesses will bear an increased percentage of the cost of emissions (Table 4.3). This looks to be an inefficient way to prevent carbon leakage. The New Zealand government should consider whether, with no cap on the allocation of permits, there is a sufficient constraint on emissions with satisfactory corresponding economic, fiscal and distributional burdens.

Table 4.3. **Per cent of carbon costs incurred, by sector**

Sector	2011-12	2013	2015
Pre-1990 forestry	100	100	100
Post-1989 forestry	100	100	100
Household and other sectors	50	100	100
Moderately intensive activities	20	40	43
Highly intensive activities	5	10	13
Agriculture	0	0	10
Waste	0	100	100

Modelling analysis has suggested that free allocations to emissions-intensive, trade-exposed sectors together with purchases of credits from countries facing lower abatement costs would maximise output (NZIER and Infometrics, 2007). However, this may miss important efficiency and dynamic gains. The price signal (incidence of the carbon tax) has been shifted from sectors with the largest amount of low-cost competitive abatement potential, or equivalently high elasticity of demand, namely industry, to those with the lowest amount of short-term abatement potential, or low elasticity of demand, namely transport and household energy use. This is the usual strategy for tax policies designed to maximise revenues but should not be for environmental policy measures that take the form of Pigouvian taxes intended to alter behaviour (Bertram and Terry, 2008). According to the OECD green growth policy framework (de Serres *et al.*, 2010), the main drawback of providing

free allocations to prevent carbon leakage and reduce competitiveness concerns is that it comes at the expense of weaker incentives to reduce the production of carbon-intensive goods, while still encouraging firms to shift production to countries where there is no carbon price via the opportunity cost of permits. The decision to make forestry face the full price signal, on the other hand, was wise, as it clearly discouraged deforestation (even if some was shifted forward to before 2008) as a low-cost, high elasticity early-abatement option. Sectoral abatement cost curves would be useful in assisting with the determination of domestic mitigation potential and climate change policy (Gleisner, 2007).

Efficient resource allocation requires that everyone pay the market price for permits. Auctioning initial permits would provide the strongest price signal and would generate revenue that could be used to offset other, less distorting, taxes (New Zealand stands to gain up to 4% of GDP in auction revenues by 2020, according to de Serres *et al.*, 2010). Unless allocations are delinked from actual emissions, the price signal will be strongly moderated in the short term. International competitiveness issues could be addressed by recycling revenues back to competitively disadvantaged firms on a different basis from that on which they are collected (OECD, 2010a), *e.g.* through compensation for stranded assets or for emissions-reducing investment or input costs. If New Zealand faces challenging and binding targets in the longer term, and wishes to meet these targets via the ETS, the transition measures will probably have to be phased out if these targets are to be met efficiently. A cap on overall emissions permits consistent with New Zealand's international obligation (but still allowing the possibility of purchasing emissions rights from abroad) should at the same time be imposed. New entrants should not receive allocations, since this would effectively raise the cap. The price of permits will have to clear the market, although mechanisms should be put in place to deal with price spikes or transitory market shortages. Depending on expectations for a post-2012 international framework, it may be appropriate for the government to reconfirm its intention to lift transition measures at the end of the first Kyoto commitment period.

Inflation and property values

As stationary energy and liquid fuels sectors receive no free allocations, they will pass at least part of the costs of buying permits into final prices, which will provide the desired price signal. The ETS was estimated to result in a 5% increase in the price of energy (electricity, liquid fuels, heat) and to add about 3 cents to the litre price of petrol in 2010 (following entry of these sectors in July), and should do so by an equivalent amount again in 2013 once the 50% discount expires (NZIER and Infometrics, 2009). The impact on CPI inflation would be only on the order of ½ per cent or so, depending on the extent of further pass-through. The way the electricity market works implies large windfall gains to hydroelectric companies, which will raise their own prices merely by taking advantage of the situation in which thermal generators are forced to raise theirs.[13] While seen by some as unfair, with households and small business paying the full subsidy to renewable energy (EITE industry and agriculture receiving NZU allocations to compensate for their electricity price increases), this is the proper incentive to encourage clean energy. Another mitigating factor is that most hydro plants are government owned, which may benefit the taxpayer, although the impact may be reduced if partial privatisations are pursued and the sales price does not embody the full benefit to the purchaser (see Chapter 3).

Property values are affected by the introduction of emissions trading, as they would be by any tax that affects the returns to property. The differential treatment of pre-1990 and

post-1989 forestry in the scheme has come in for criticism for diminishing property values. This is again an artefact of the Kyoto agreement that treats forests differently on the basis of an arbitrary start year, rather than the result of deliberate choice by the designers of the ETS itself. The government has therefore decided to provide one-time compensation to pre-Kyoto forest owners. The government has also provided compensation to Māori owners who receive their forests only under Treaty of Waitangi settlements after the commencement of the first Kyoto commitment period. The eventual inclusion of agriculture in the ETS will drive down the value of farms as well, perhaps significantly, depending on the future carbon price.

Agricultural sector

The delay until 2015 for the entry of agriculture into the scheme may arguably have made it more costly for the economy to reach its target. This may slow adjustment and cause the sector to miss significant abatement opportunities. On the other hand, the net benefits of bringing agriculture into the ETS are unclear because so long as proven and cost-effective mitigation technology does not exist, controlling agricultural emissions amounts to reducing output, which is not obviously in the global interest, given New Zealand's high level of productive efficiency. It has also been argued that no other country has included agriculture in its trading scheme, nor apparently intends to, so New Zealand should not either; indeed, doing so would subject it to the double competitive disadvantage of having to pay for emissions, even as it is not given any producer subsidies largely still enjoyed abroad. However, in no other country is agriculture such a major contributor to emissions. If New Zealand faces binding international obligations after 2012, excluding agriculture could impose a disproportionate burden on all the other sectors of the economy.

There is some debate about how costly mitigations in the sector in fact are. It has been estimated by its advocates that greater use of nitrification inhibitors could both reduce nitrous oxide emissions and increase farm profitability, although this observation raises the question of why farmers have not widely adopted such technologies already. The Ministry of Agriculture considers that the full adoption of nitrification inhibitor technology in the dairy sector is not possible, as it can only be applied at certain times.[14] It is also possible that farmers could increase stocking rates through use of some inhibitors, and thus increase both CH_4 and N_2O emissions. Methane reduction technology research lags that for nitrogen and is in an experimental stage. Current mitigation options are also likely to be commercially viable only with a positive carbon price as they would require farmers to spend more on inputs (various plants and grasses and even spices for methane-reducing animal feeds, new methods of soil management to sequester carbon, etc.).

It has been argued that measuring agricultural emissions could be so costly that it negates the advantages of trading (NZIER and Infometrics, 2009). For the same reason, it may be difficult to measure and obtain international recognition for the effectiveness of agricultural emissions-mitigating technologies. Furthermore, as meat and dairy processing firms will be the point of obligation for the sector, it may be both hard for the individual farmer to perceive the carbon price incentive and unrealistic for the food processor to monitor individual farms. Overcoming such problems has required the development of meaningful proxies for emissions.[15] The government also intends to improve the accuracy of the proxies and to recognise mitigation through "unique emissions factors" and payments for "removal activities". Fonterra, for example, would have to withhold dairy pay-outs to farmers failing to satisfy objectives. New computer software to help farmers

monitor their nitrogen budgeting and emissions (OVERSEER) should be more widely adopted and used for centralised data gathering purposes to advance these efforts.

Fiscal impacts

The government has emphasised the fiscal neutrality of its scheme, but it faces considerable contingent liabilities and hidden risks. Forestry liabilities could fall to government if forestry owners were to go bankrupt upon harvesting. The Treasury has, appropriately, included contingent Kyoto forest liabilities in the 2010-11 budget, estimated at NZD 1.7 billion for CP1 based on the current carbon price, but not for later years. It also cites the 2011 review of the ETS and inability to predict foresters' behaviour during CP1 as specific risks. In addition, there are significant fiscal risks attached to open-ended free allocations, without an emissions cap and sunset clause. Another, albeit perhaps second order, risk to the fiscal accounts may arise from Joint Implementation (JI) projects allowing investors in other Annex 1 countries to invest in NZ abatement projects and so earn credit for their own countries which must be paid for in "hard currency" AAUs held by the New Zealand government, and which in turn may have to be replaced by the NZ taxpayer in order to meet the final commitment (which must be paid in AAUs). Such investors might cherry pick low-cost mitigation options in New Zealand (Bertram and Terry, 2008).[16] Foresters choosing to trade their NZUs for foreign AAUs could have similar results. This increases a risk that the government will have to purchase units if it provides a domestic price cap below the world price. It may also increase the price that domestic emitters face, but this will occur only if the world price is greater than the domestic price.

Political economy challenges

A lesson appears to be that an ETS, for all its efficiency advantages, requires strong governance institutions in order to ensure transparency, simplicity and low transactions costs. The ETS, as it stands, is complex and its long-run fiscal and distributional consequences unclear, despite efforts at transparency. The thresholds for eligibility and the formula for granting allocations is set in legislation, but, unlike explicit tax expenditures that are listed in the fiscal accounts, the amounts involved and final risks to taxpayers remain unclear. Major substantive amendments to the NZ ETS were made in the run-up to the 2009 Copenhagen meeting and passed through Parliament, with limited time for public consultation or proper consideration of public comments on the draft law, and with no supporting analytical reports, unlike for the original (2008) ETS proposal. As a result, criticisms in civil society and the international press were unusually strong.[17] The lack of bipartisan support suggests that there is a risk of reversal, which raises uncertainty. Making the reform work and stick will require a much higher degree of public understanding and support. Further increasing the role of the EPA – as an independent agency – in the running of the scheme could help by depoliticising issues like permit allocations.[18]

Allocations to EITE industries are designed to be temporary and to be withdrawn as soon as consistent actions by trading partners are taken, but they may prove to be hard to reverse politically. The Regulatory Responsibility Bill has been invoked by some as increasing this risk. However, the continuing right to emit GHGs into the atmosphere should not be viewed as a property right and this is not the intention of the Bill (Chapter 3). Free allocations provided for political economy or competitiveness reasons should be strictly time-bound, in accordance with OECD best-practice principles under the green growth strategy.

Consistency with other measures

Other policies may effectively tax or subsidise GHG emissions and should be re-evaluated for their consistency with ETS objectives. They may distort the intended carbon price signal, often violating neutrality of pricing across sectors and activities, unless there are clear and specific market failures that they can be shown to address, while regulations rarely show large enough benefits to justify often high implicit abatement costs. Conversely, the ETS might inadvertently intrude on other environmental goals.

Road transport policies

The use of environmental taxes in New Zealand is one of the lowest in the OECD (OECD, 2010b). This mainly reflects light taxation of motor fuels and vehicles, by far the largest environmental tax base in OECD countries, in part because of low population density and consequent lack of public transport. With the advent of the ETS (a sufficient approach to GHG emissions control), motor vehicle regulations should be removed, unless justified by environmental externalities not otherwise addressed by a carbon price (*e.g.* local pollution). Indeed, the earlier new vehicle fuel efficiency standard, which in any event was an inefficient and poorly targeted regulation (NZIER, 2007), was repealed as a duplicative policy when the ETS came into force. The NZ fuel excise tax (topped up by a modest Accident Compensation Commission fuel levy intended to fund accident compensation) can, on the other hand, be seen as a tax on a proxy for exhaust emissions, containing a range of air pollutants (such as particulates) other than carbon monoxide, and as such, should be retained and even could be raised. Road charging could reduce congestion, and thereby also reduce emissions, especially if it varied according to the fuel efficiency of the vehicle. As the ETS carbon price signal strengthens, such taxes could be phased out in part. The tax break on diesel fuel, which is primarily used by commercial entities should be withdrawn as an environmentally inefficient way to assist truck drivers, farmers and boat operators. Even with carbon pricing, diesel deserves Pigouvian excise taxation because of the carcinogenic nature of the particulate emissions involved.

Energy policies

Energy policy has been aligned with the ETS with the abolition of both the biofuel sales obligation and the moratorium on new base load thermal generation. In other respects, it may still work at cross-purposes with Kyoto objectives. A case in point is the proposed development of two lignite plants, involving a major energy SOE and at least one private partner. The business plan features the conversion of lignite (a low-grade coal widely used in Australia for electricity generation) into synthetic diesel fuel by means of a process that is itself extremely energy intensive, with around double the emissions intensity of diesel made from conventional crude oil. It has been estimated that even if just the smaller of these two plants were to go into production New Zealand's GHG emissions gap would be 20% higher due to the higher emissions intensity of producing diesel in this way (PCE, 2010b). Even if the diesel is used domestically, the fact that it is an internationally traded product makes it eligible for free ETS allocations at the 90% level (given that it is a highly energy intensive EITE industry as well), though it is not clear how the last three years' sector-average emissions intensity level should be defined for purposes of the allocation. Allowing such new production to access free allocations may be at odds with the spirit of New Zealand's international commitments and the OECD's green growth strategy. In the end, however, this issue reflects the fact that the quantity of ETS permits (NZUs) is not now

capped. Once it is, then lignite can be brought under the cap, the producers will have to acquire permits and the economic decision (based in part on the price of permits) can be made about whether or not to continue production.[19]

Electricity metering that allows monitoring of real-time consumption would transmit carbon price signals to households. The large scale installation of new meters is underway; yet these meters will not contain the essential final piece of technology that makes them "smart", namely displays in the home that would show the price of electricity at the time of usage. Companies refused to install these even if the customer agreed to pay, while finding the meters up to that point useful for their own data-gathering purposes (PCE, 2009c). The electricity regulator should mandate this feature, which is in the clear interest of the consumer and environment. Ultimately, the introduction of time-varying pricing to reduce peak load demands would help consumers minimise their energy outlays.

Increasing so-called fuel poverty is an often overlooked problem internationally. Environmental taxes are highly regressive insofar as energy bills in some countries are now upwards of 20% of poor households' budgets and sometimes larger than food bills. Low-income household energy assistance may therefore be warranted (as under the US LIHEAP), especially as the carbon price rises. Smart metering along with weatherisation programmes and upgrading inefficient old appliances would also help poorer households to better manage their energy costs. But a key problem in this domain is that poorer people tend to live in older, low-cost rental units lacking insulation, where the landlord has little interest in undertaking heat-loss mitigating investments that would benefit only the tenant, and therefore will be indifferent to the price signals in the ETS. Mandating such investments may succeed only in raising rents. What is ultimately needed is a co-ordinated approach that integrates home energy and housing policy (Hernández and Bird, 2010). Enhanced energy information and education may also be required. Existing weatherisation schemes assisting middle class families (as income tax deductions) should, on the other hand, be phased out as the carbon price signal strengthens. The Warm Up NZ Heat Smart programme has made some progress in incentivising the landlords of low-income tenants in particular to invest in insulation and heating.[20]

Innovation policy

While subsidies to clean-energy technologies might be justified because of the large up-front costs and risks of R&D that has clear social benefits, New Zealand has been careful in their use, instead putting primary emphasis on the ETS. For example, there are no "feed-in" tariffs to green energy development as elsewhere in the OECD. The biofuels sales obligation on motor fuel has been cancelled with introduction of the ETS, in view of the questionable value of first-generation biofuels, and replaced by a 42.5 cents per litre subsidy on domestically produced biodiesel (thought to be more environmentally friendly than most imported biodiesels) until 2012. Such policies are in the spirit of imposing a uniform price on carbon emissions. Nevertheless, modest support (*e.g.* R&D credits) for second-generation, wood-based biodiesel should be considered, given its estimated 90% lifecycle reduction in GHG emissions compared with fossil fuel diesel, local abundance of the raw material and the importance of diesel fuel as a production input (in agriculture, trucking) (PCE, 2009c).

There is an even stronger case for public assistance to the development of technologies for agricultural GHG mitigation, given the country's emissions profile. An agricultural emissions research levy was at first proposed but encountered opposition from

the farming sector and was abandoned. A joint industry-government funded Pastoral Greenhouse Gas Research Consortium was formed in 2006 as an alternative to imposing the levy on farmers. The Consortium has done promising, world-class research. In 2010, the Government supported the establishment of the Agricultural GHG Research Centre, with 100% government funding. The Centre leads New Zealand's research contribution on livestock for the Global Research Alliance on Agricultural Greenhouse Gases, which was initiated by New Zealand at the margins of the 2009 UN Copenhagen conference. The government's decision to play a leading role in fostering international co-operation in agricultural GHG mitigation research is productive and welcome. It may still be necessary to amend the 2002 Hazardous Substances and New Organisms Act to allow experimentation with new genetic strains of livestock and feeds that could enable lower ruminant methane emissions. New Zealand should envisage becoming the leading exporter of agricultural emissions mitigation technology to the world, supplying a global public good. Agriculture everywhere will face significant challenges in meeting a dramatic increase in world food demand while also reducing its contribution to GHG emissions.

Biodiversity management

Incentives to reforest, both for commercial and native forests, are being provided by price signals in the ETS as well as grant schemes. The government estimates that these schemes will lead to 30 000 hectares of afforestation per year by 2020. Besides sequestering carbon, forests have a significant environmental benefit in curbing soil erosion on marginal high-country land. Tree roots contribute to stability of forested slopes by holding the soil together. Trees also remove soil moisture, thereby preventing slips. Sloping land under production is at risk between harvesting and replanting, although "continuous cover" forests systems are becoming more attractive under carbon pricing (10 000 hectares have already applied to join the permanent forest sink initiative). Forests also provide valuable erosion control in some pastoral farming areas, where sediment carried into waterways through erosion contains phosphorous and also contributes to the problem of declining water quality.[21] Plantation forests, if properly managed, may also contribute to the conservation of biodiversity by providing habitat for indigenous species and helping to protect boreal forest remnants.

The ETS may also have unintended effects. Exotic trees, *e.g.* California radiata pine, sequester carbon faster than indigenous species, but indigenous forests sequester more carbon over the long term. Indigenous land cover provides other valuable services, such as clean air and water, soil conservation, products like honey and fine wool production, and unique biodiversity. There is a risk that low-stature indigenous scrub (*e.g.* grasslands), which may not be counted as forest, will be cleared to make way for fast growing radiata pine plantation forests. Wilding pines may also be allowed to spread into indigenous grasslands, potentially earning credits while harming biodiversity.[22] There is a need to balance the immediate need for fast carbon sequestration against the long-term benefits of potentially greater carbon storage and preservation of indigenous biodiversity, by protections in legislation and accounting rules (PCE, 2009a). Whereas afforestation grants on top of the full carbon price signal might at first glance seem redundant, the need to control soil erosion and promote indigenous forest plantings could argue for maintaining them so as to give value for various forest activities over and above their capacity to store carbon.

Box 4.6. **Recommendations for greener growth**

Improve governance arrangements for sustainable development policy

- Further improve horizontal co-ordination of sustainable development policy, including energy and transport, and Kyoto objectives across the numerous ministries involved.
- Improve vertical co-ordination. Central government should provide national policy statements and set national environmental standards, as required for effective and consistent regulation by local authorities. It should also help provide them with technical training and expertise to set environmental goals and implement policies to achieve them most efficiently.
- Ensure that the new Environmental Protection Authority has sufficient independence and analytical capacity to act as overseer of policies to achieve environmental goals in an economically efficient manner.
- As the EPA takes over resource consenting where warranted by national interests, clearly define the boundaries between national and local competencies so as to maintain the benefits of subsidiarity, which are considerable in the case of environmental policy.
- The Resource Management Act (RMA) should be further amended to carry forward the proposed reforms to integrate urban and rural land- and water-use planning and also to better clarify and further facilitate the possible uses of market-based instruments.

Make greater use of market-based instruments in natural resource management

- Enforce the RMA's requirement (under Section 32) to consider the costs and benefits of alternative policies, including market-based approaches as opposed to the default option of command and control. Make sure this includes quantification wherever possible.
- Continue to develop better measurement of water abstraction and quality via evolving national guidelines. On this basis, implement water charging for domestic, industrial and agricultural uses.
- Allow water use consents to be tradable with as few restrictions as possible. Make the scope and definition of consents more amenable to trading by unbundling entitlement and use and ensuring consistent rules around when they can be adjusted. Apply pollution-rights trading to address water (and air) pollution, as in the Lake Taupo case; but avoid giving newcomers free rights.

Strengthen price signals in climate change policy, conditional on the international context

- Continue to review the effectiveness of the Emissions Trading Scheme (ETS), with the aim of achieving Kyoto goals most efficiently. Improve assessments of past policy performance and of future contingencies in Kyoto accounting. Devote sufficient resources to financial risk management in departments responsible for meeting Kyoto or other international mitigation obligations.
- If there is a Kyoto-style international agreement, set a cap on ETS permit allocations while removing the limit on the domestic carbon price (retaining some form of backstop against excessive price fluctuations), consistent with meeting international commitments. Discontinue the current temporary 50% discount for non-forestry sectors as scheduled. Consider auctioning permits and use auction revenues to cut distortive taxes or to compensate poorer households. Use the 2011 review to put these changes into place.
- As in the EU ETS, set aside a buffer within the overall cap (itself being set equal to 1990 national gross emissions, *i.e.* the Kyoto baseline) for free allocations to exposed firms. Distribute them in a targeted and efficient manner that is independent of actual

Box 4.6. **Recommendations for greener growth** *(cont.)*

emissions. Retain temporarily free allocations to sectors that meet the current EITE criteria until such time as major trading partners (Australia, United States, Japan) implement their own carbon pricing schemes (or until the buffer is depleted). Make it clear at the time of the 2011 review that these will in no case imply the right to further compensation for reduced property values.

- Do not provide new entrants into the protected sectors free allocations, as this would be antithetical to the objectives of the ETS. Such new firms (*e.g.* lignite-to-diesel producers) should have to purchase permits to cover their entire emissions.
- If there is continued international uncertainty maintain uncapped allocations to EITE firms while shifting their method of distribution toward delinkage from intensity-based output in order to assist restructuring toward a low-carbon economy. Tax credits for example could be given for costs of emissions-reducing investments or inputs. With presumably no international obligations to be renegotiated in this case, the result would be a *de facto* carbon tax with targeted tax relief for vulnerable industries, having the objective of keeping New Zealand on a environmentally sustainable growth path and in continued anticipation of a future agreement.
- Extend the ETS to agriculture in 2015 as planned but so long as it remains sheltered elsewhere, maintain a flexible regime.
- Provide incentives under the ETS to create permanent carbon sinks, notably by protecting indigenous forest plantings and wetlands reclamation. Continue to work toward post-Kyoto accounting rules that facilitate such incentives. Maintain afforestation grant schemes that help control soil erosion and encourage indigenous forest plantings beyond that afforded by ETS incentives alone.
- Investigate and promote innovations (*e.g.* smart metering, pastoral emissions mitigation technology, wood- or algae-based biodiesel) where they have proven potential to enhance the responsiveness of consumers and producers to ETS price signals.

Notes

1. According to C. James ("In search of elusive green growth", *Dominion Post*, 22 March 2010), retail chains are the new regulators. For example, Marks and Spencer, a British chain, has launched a massive "eco and ethical" plan mandating sustainability standards in the food, clothing and home items it sells. Ikea, WalMart, Unilever and others have likewise embraced profit-enhancing green marketing strategies.
2. Low lying flat land is most suitable for grazing, especially by dairy cattle but in that case also requires higher-quality grass, hence more ample watering, than sheep or cattle for slaughter. Many such areas, such as the Canterbury plains, are intrinsically dry and thus have not been traditional dairy farming regions until lately, as the dairy price surge made it economical to invest in expensive irrigation infrastructure.
3. Partial trades, *i.e.* selling unused parts of entitlement, have been allowed since 2009.
4. Grimes and Aitken (2008) find that based on sales price equations, reasonable variation in the size of water rights and farm characteristics can give rise to a positive irrigation premium of up to 50% relative to similar non-irrigated properties. The net return to irrigation would be negative for many farms after investment costs are taken into account. Since the shadow price of water varies significantly with farm characteristics, water may be misallocated.
5. One company in the Canterbury region reportedly spent 10 years and NZD 11 million in seeking a water consent including the right to build a new storage facility. The consent was finally granted but the storage facility denied.

6. In Environment Canterbury, a new Water Strategy is under development and may involve the building of up to five new dams to allow agricultural production to increase by a targeted 50%.

7. Both the original Māori people and the European colonists made huge changes over a relatively short time. Māori burned forest and practised agriculture using plants they brought from tropical Polynesia. The Europeans logged and burned off a third of the forest cover to convert land to pastoral farming. Relief workers in the 1930s later planted vast areas of non-native radiata pine. Land conversions were stepped up after the abolition of agricultural subsidies in the mid-1980s. Some 90% of the nation's original wetlands has been destroyed (OECD, 2007).

8. Land Information New Zealand (LINZ) manages almost three million hectares of Crown land for farming and forestry, including 1.6 million hectares of high country pastoral land in the South Island and Crown forest land in the North Island, with the objective of putting this land to most efficient use.

9. The current proposal applies to the 60% of the conservation estate (which totals 8.5 million hectares) where mining can currently occur, that is, land that is not listed on Schedule 4 of the Crown Minerals Act. An earlier proposal would have allowed mining access to Schedule 4 land, including all national parks, with heightened protections. However, the public outcry was so great that the government quickly retreated (PCE, 2010a).

10. Nuclear energy is not prohibited. The NZ Nuclear Free Zone, Disarmament and Arms Control Act 1987 only precludes the use, production and transit of nuclear weapons, as is the use of nuclear propulsion. Nuclear explosions are also prohibited. See: *www.legislation.govt.nz/act/public/1987/0086/latest/DLM115116.html*.

11. Kyoto accounting allows 2008-12 performance as measured by *net* emissions to be apparently compared with a *gross* 1990 baseline emissions target. The treatment of pre-1990 forests, which eliminates their continuing carbon removal activity as of the baseline year, effectively sets 1990 net emissions equal to 1990 gross emissions. However, Kyoto accounting formally starts only in 2008.

12. For industry, allocations are more generous to those who qualify to receive them (being intensity based). But the revisions to the ETS also made it much more difficult to qualify – with strict emissions intensity thresholds on the face of the legislation. As a result, after the transition phase there will be lower levels of allocation to industry in the period 2012-18 than was predicted under the previous scheme. For agriculture, allocation is more generous overall. But, as agriculture emissions are not projected to rise significantly, the projected difference in levels of allocation compared with the pre-amendment ETS is small to 2018. Beyond 2018, allocations overall do become more generous compared to the previous version of the scheme given the divergence in phase out rates, though regular review clauses in the NZETS could change matters once there is more certainty about the action to be taken by major competitors.

13. It was estimated that, under the original (2008) legislation, the pass through of energy costs would imply a NZD 750 cost to consumers per metric tonne of CO_2 reduction to consumers (largely reflecting the cost of windfall profits to hydro companies) at a NZD 30/tonne permit price for thermal energy companies (Bertram and Terry, 2008). This cost would be roughly half as much under the weaker carbon price signal decided in 2009 for CS1.

14. Research shows that if all dairy land were treated, New Zealand would save between 1.85 and 5.28 Gg of N_2O in 2010, or 0.573 to 1.6 Mt CO_2-e.

15. Proxies have been developed: see *www.maf.govt.nz/agriculture/agriculture-ets/regulations-for-agriculture-in-the-nz-ets.aspx*.

16. There are a total of 26 projects in the Projects to Reduce Emissions (PRE) programme. Only seven of these have opted to become Joint Implementation projects to date. This involves half (2.7 million) of the total 5.4 million units being converted to ERUs and being sold offshore. The remaining 2.7 million AAUs from PRE projects will be sold domestically and some will be sold back to the Crown. Four PRE projects have sale and purchase agreements with the Crown.

17. The Parliamentary Commissioner for the Environment stated that the modified ETS will actually raise emissions (PCE, 2009d).

18. The EPA will take on administration of much the scheme from October, including the Registry and the processing of allocations. The fact that, for example, thresholds and formulae for allocation are in legislation makes it easier for them to do this independently. A major problem with a more usual system of *ad hoc* or discretionary allocations is the potential for lobbying by the politically connected.

19. The International Energy Agency has recommended that New Zealand create a long-lasting climate change policy and clarify the impact of the ETS *vis-à-vis* the use of coal in order to facilitate decision making by the coal industry. It has also recommended to clarify the prospects of large-scale use of carbon capture and storage in New Zealand in order to enable the use of coal as a future energy source within the limits of the ETS (IEA, 2011).

20. See: *www.energywise.govt.nz/node/18453*.

21. See Parliamentary Commissioner for the Environment (2011), *Review of MAF Afforestration Schemes*.

22. Wilding pines are classed as a pest species and their removal can be exempted from liabilities under the NZ ETS, mitigating these risks.

Bibliography

Barker, R. (2008), "The Natural Resource Potential of New Zealand", March, mimeo.

Bertram, G. and S. Terry (2008), *The Carbon Challenge: Response, Responsibility and the Emissions Trading System*, Sustainability Council of New Zealand, Wellington, April.

Business NZ (2010), "Water Management: Issues and Solutions", March.

Dellink, R., G. Briner and C. Clapp (2010), "Costs, Revenues, and Effectiveness of the Copenhagen Accord Emission Pledges for 2020", *OECD Environment Working Papers*, No. 22, Paris.

De Serres, A., F. Murtin and G. Nicoletti (2010), "A Framework for Assessing Green Growth Policies", *OECDEconomics Department Working Papers*, No. 774, Paris.

Federated Farmers of New Zealand (2009), "Submission to the 2025 Taskforce", 3 September.

Gleisner, B. (2007), "A Conceptual Framework to Assist Decision Making on International Climate Change Policy", *Treasury Discussion Paper*, December.

Grimes, A. and A. Aitken (2008), "Water, Water Somewhere: The Value of Water in a Drought-Prone Farming Region", *Motu Working Paper 08-10*, Motu Economic and Policy Research, Wellington.

Hernández, D. and S. Bird (2010), "Energy Burden and the Need for Integrated Low-Income Housing and Energy Policy", *Poverty and Public Policy*, Vol. 2, Issue 4, Article 2, *www.psocommons.org/ppp2*.

Hood, C. (2010), "Free Allocation in the New Zealand Emissions Trading Scheme: A Critical Analysis", *Policy Quarterly*, Vol. 6, Issue 2, February, *www.google.co.nz/url?sa=t&source=web&cd=6&ved=0CCsQFjAF&url=http%3A%2F%2Fips.ac.nz%2Fpublications%2Ffiles%2F1bfe09fd6c7.pdf&ei=Q2NtTbGPOY6evgO2lZTcBA&usg=AFQjCNGJ5eSFhOEuyPOAChGR9SAhqPZg5w*.

International Energy Agency (IEA) (2011), *Energy Policies of IEA Countries: New Zealand, 2010 Review*, OECD Publishing.

Kerr, S. (2009), "Comments to Select Committee, Invited Independent Specialist Advice on the Climate Change Response (Moderated Emissions Trading) Amendment Bill", *Motu Report MEL0473*, Motu Economic and Policy Research, Wellington, 18 November.

Land and Water Forum (2010), *Report of the Land and Water Forum: "A Fresh Start for Fresh Water"*, September.

McMahon, F. and M. Cervantes (2011), *Survey of Mining Companies, 2010/2011,* Fraser Institute, Vancouver, BC, Canada.

Ministry for the Environment (MfE) (2010), "New Zealand's Greenhouse Gas Inventory 1990-2008", Wellington, April.

NZIER (2007), "Vehicle Emission Standards: Feasible Policy Alternatives to the Government's Proposed Draft Rule", *Report to the Independent Motor Vehicle Dealers Association and Motor Trade Association*, August.

NZIER and Infometrics (2009), "Macroeconomic Impacts of Climate Change Policy: Impact of Assigned Amount Units and International Trading", *Final Report to the Ministry for the Environment*, 22 July.

OECD (2007), *Environmental Performance Reviews: New Zealand*, OECD Publishing, Paris.

OECD (2010a), "Linkages Between Environmental Policy and Competitiveness", *OECD Environment Working Papers*, No. 13, Paris.

OECD (2010b), *Taxation, Innovation and the Environment*, OECD Publishing, Paris.

OECD (2011), *Green Growth Strategy: Synthesis Report*, OECD Publishing (forthcoming), Paris.

Oram, Rod (2009), "Clean Tech Key Factor in Future NZ Growth", *Sunday Star Times*, 4 October, *www.sstlive.co.nz*.

Parliamentary Commissioner for the Environment (PCE) (2009a), "Report to Emissions Trading Scheme Review Select Committee: Impact of the ETS on Indigenous Land Cover", 30 April, *www.pce.parliament.nz*.

PCE (2009b), "Smart Electricity Meters: How Households and the Environment Can Benefit", June.

PCE (2009c), "Some Biofuels are Better than Others: Thinking Strategically About Biofuels", 29 July.

PCE (2009d), "Submission to the Finance and Expenditure Select Committee on the Climate Change Response (Moderated Emissions Trading) Bill", 13 October.

PCE (2010a), "Making Difficult Decisions: Mining the Conservation Estate", September.

PCE (2010b), "Lignite and Climate Change: The High Cost of Low Grade Coal", November.

PCE (2011), "The Environmental Protection Authority Bill", Submission to the Local Government and Environment Select Committee, January.

Sharp, B. (2002), "Institutions and Decision Making for Sustainable Development", *New Zealand Treasury Working Paper* 02/20, September.

Stiglitz, J.E., A. Sen and J.P. Fitoussi (2008), Report by the Commission on the Measurement of Economic Performance and Social Progress, *www.stiglitz-sen-fitoussi.fr*.

Sustainability Council of New Zealand (2010a), "New EPA Provides Hope of Improved Environmental Administration", 4 June, *www.sustainabilitynz.org/news_item.asp?sID=206*.

Sustainability Council of New Zealand (2009), "ETS: Bill to a Future Generation", 2 August, *www.sustainabilitynz.org/docs/BilltoaFutureGeneration.pdf*.

Todd, M. and S. Kerr (2009), "How Does Changing Land Cover and Land Use in New Zealand Relate to Land Use Capability and Slope?"*Motu Working Paper* 09-17, Motu Economic and Policy Research, Wellington.

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

The OECD is a unique forum where governments work together to address the economic, social and environmental challenges of globalisation. The OECD is also at the forefront of efforts to understand and to help governments respond to new developments and concerns, such as corporate governance, the information economy and the challenges of an ageing population. The Organisation provides a setting where governments can compare policy experiences, seek answers to common problems, identify good practice and work to co-ordinate domestic and international policies.

The OECD member countries are: Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The European Commission takes part in the work of the OECD.

OECD Publishing disseminates widely the results of the Organisation's statistics gathering and research on economic, social and environmental issues, as well as the conventions, guidelines and standards agreed by its members.

OECD PUBLISHING, 2, rue André-Pascal, 75775 PARIS CEDEX 16
(10 2011 09 1 P) ISBN 978-92-64-09316-4 – No. 58091 2011

OECD Economic Surveys

NEW ZEALAND

SPECIAL FEATURE: HOUSING

Most recent editions

Australia, November 2010
Austria, July 2009
Belgium, July 2009
Brazil, July 2009
Canada, September 2010
Chile, January 2010
China, February 2010
Czech Republic, April 2010
Denmark, November 2009
Estonia, April 2011
Euro area, December 2010
European Union, September 2009
Federal Republic of Yugoslavia, January 2003
Finland, April 2010
France, March 2011
Germany, March 2010
Greece, July 2009
Hungary, February 2010
Iceland, September 2009
India, October 2007
Indonesia, November 2010
Ireland, November 2009
Israel, January 2010
Italy, April 2011
Japan, September 2009
Korea, June 2010
Luxembourg, May 2010
Mexico, July 2009
Netherlands, June 2010
New Zealand, April 2011
Norway, March 2010
Poland, April 2010
Portugal, September 2010
Romania, October 2002
Russian Federation, July 2009
Slovak Republic, November 2010
Slovenia, February 2011
South Africa, July 2010
Spain, December 2010
Sweden, January 2011
Switzerland, December 2009
Turkey, September 2010
Ukraine, September 2007
United Kingdom, March 2011
United States, September 2010

Please cite this publication as:
OECD (2011), *OECD Economic Surveys: New Zealand 2011*, OECD Publishing.
http://dx.doi.org/10.1787/eco_surveys-nzl-2011-en
This work is published on the *OECD iLibrary,* which gathers all OECD books, periodicals and statistical databases.
Visit ***www.oecd-ilibrary.org***, and do not hesitate to contact us for more information.

Volume 2011/9
April 2011

ISSN 0376-6438
2011 SUBSCRIPTION (18 ISSUES)
ISSN 1995-3100
SUBSCRIPTION BY COUNTRY

ISBN 978-92-64-09316-4
10 2011 09 1 P

OECDpublishing
www.oecd.org/publishing