

Unclassified

ECO/WKP(2013)79

Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development

12-Sep-2013

English - Or. English

ECONOMICS DEPARTMENT

ECO/WKP(2013)79
Unclassified

IMPROVING SCHOOL-TO-WORK TRANSITIONS IN NEW ZEALAND

ECONOMICS DEPARTMENT WORKING PAPERS No. 1087

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JT03344320

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ABSTRACT/RÉSUMÉ

Improving school-to-work transitions in New Zealand

The NZ labour market is among the most flexible in the OECD, and outcomes for its young people have been among the best. However, labour-market opportunities are heavily determined by initial education, where New Zealand's system is also successful and innovative in many ways. Average PISA results are among the OECD's highest, but the dispersion of performance is also high, indicating a sizable group of underachievers. Those in disadvantaged groups tend to have poor scholastic outcomes. These initial educational handicaps show up in higher drop-out rates and youth joblessness, greatly limiting these youths' future life chances. Indeed, intergenerational persistence in educational and employment outcomes appears very high. From both a social and economic point of view, it will be essential to develop more fully the human capital of the fast growing demographic group of ethnic minorities. Better teaching quality is needed, with more attention devoted to diversity of student needs and learning approaches to keep children in school. A related problem is the apparently large divergence between the nature of skills supplied by the education sector and the skills demanded by employers. A greater role for youth apprenticeships could help to raise skill levels while aligning them better to the economy's needs. All this has an important bearing on the government's ambition to secure strong and sustainable growth with rising living standards and equal opportunities for all. This Working Paper relates to the 2013 *OECD Economic Survey of New Zealand* (www.oecd.org/eco/surveys/new-zealand-2013.htm).

JEL classification codes: H52; I21; I22; I24; I25; I28; J21; J23; J24; J62; J63

Keywords: youth unemployment; NEET; Maori; Pasifika; human capital; education attainment; education achievement; early childhood education; schooling; tertiary education; vocational education; training; apprenticeships; skills; qualifications; labour market matching; youth activation policies; youth minimum wage; education funding; student loans; student grants; teaching quality; assessments and evaluation in education; school choice; private returns to education; careers education

Améliorer la transition de l'école vers l'emploi en Nouvelle-Zélande

Le marché du travail néo-zélandais est l'un des plus flexibles de la zone OCDE, et l'un de ceux qui affiche les meilleurs résultats pour l'emploi des jeunes. Néanmoins, les débouchés professionnels sont largement déterminés par la formation initiale, autre domaine dans lequel la Nouvelle-Zélande se montre performante et novatrice à de nombreux égards. Les résultats moyens obtenus à l'enquête PISA font partie des plus élevés de la zone OCDE, mais la dispersion des scores est également importante, ce qui donne à penser qu'une proportion non négligeable d'élèves est en situation d'échec. De manière générale, les personnes issues d'un milieu défavorisé n'ont pas de bons résultats scolaires. Ces handicaps rencontrés au stade de la formation initiale se manifestent par des taux élevés d'abandon scolaire et de chômage chez les jeunes, qui limitent grandement leurs chances dans la vie. De fait, la persistance intergénérationnelle des résultats en matière d'éducation et d'emploi ressort comme étant très élevée. D'un point de vue économique et social, il sera essentiel de développer davantage le capital humain du groupe démographique constitué par les minorités ethniques, en croissance rapide. Il convient d'améliorer la qualité de l'enseignement, et notamment d'accorder davantage d'attention à la diversité des besoins et méthodes d'apprentissage des élèves pour les maintenir à l'école. Autre problème connexe, il semble y avoir un décalage important entre la nature des compétences acquises dans le système éducatif et de celles demandées par les employeurs. Le développement de l'apprentissage pourrait permettre d'élever les niveaux de compétences des jeunes et de les aligner plus étroitement sur les besoins de l'économie. Tout ceci aura une incidence importante sur l'ambition que s'est donnée le gouvernement d'assurer une croissance solide et durable, porteuse d'une élévation des niveaux de vie et de chances égales pour tous. Ce Document de travail se rapporte à l'*Étude économique de l'OCDE de la Nouvelle-Zélande 2013* (www.oecd.org/fr/eco/etudes/nouvelle-zelande-2013.htm).

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Mots clefs : Chômage des jeunes ; Non scolarisés ; ni employés ni en formation ; Maori ; îliens du Pacifique ; capital humain ; niveau d'études ; achèvement des études ; éducation des jeunes enfants ; scolarisation ; enseignement supérieur ; formation professionnelle ; formation ; apprentissage ; compétences ; qualifications ; adéquation du marché du travail ; mesures actives pour les jeunes ; salaire minimum des jeunes ; financement de l'éducation ; prêts étudiants ; aides publiques pour les étudiants ; qualité de l'enseignement ; évaluation et appréciation de l'éducation ; choix de l'école ; rendements privés de l'éducation ; enseignement sur les carrières.

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Improving school-to-work transitions in New Zealand

By
Alexandra Bibbee¹

New Zealand's disappointing record on productivity growth reflects, in part, a skills deficit that impedes firms' ability to innovate and grow. Technology and globalisation put a high premium on skills, which may not be well supplied by the education sector when change is rapid, but also on experience as a means of acquiring skills, disadvantaging youth. The global crisis has intensified the structural disadvantages of the young, as skills and experience are even more highly prized when macroeconomic conditions worsen.

Establishing stronger linkages between education and work would help to assure that the acquired skills of graduates better fit the needs of business. The education system must also do more to develop the human capital of low skilled youth, who are particularly vulnerable to shocks. Businesses need more profitable market opportunities, via reforms, to allow them to pay for requisite skills. Otherwise, skills shortages may constrain growth as the working population ages and the youth share shrinks further, limiting the possibilities for continued expansion of the labour force. More skills of the right type, and their effective utilisation, will enable youth to move more seamlessly from education to work.

The analysis in this paper will: *i*) look at relative strengths and weaknesses in the NZ youth transition; *ii*) review youth labour-market performance, institutions and policies to improve the demand for youth labour; *iii*) examine the performance of the education system and discuss policies to reduce drop-out rates; and *iv*) shed light on policy issues regarding vocational education and training (VET), on-the-job learning, career advice and school-employer linkages in skills development and better work transitions.

Youth transition difficulties

New Zealand performs very well *vis-à-vis* other countries in terms of initial education and youth employment outcomes (Table 1). However, youth transitions (as elsewhere) are more complex and less linear than they once were (Rea and Callister, 2009). Early job experience involves high turnover, uncertainty and little on-the-job skills development. Furthermore, one-third of 20 to 24 year olds have left

1. Formerly OECD Economics Department; e-mail: aibaiib@yahoo.com. This paper was originally prepared for the OECD *Economic Survey of New Zealand* published in June 2013 under the authority of the Economic and Development Review Committee. It was edited slightly and expanded to include a previously unpublished annex. The author is thankful to Calista Cheung, Andrew Dean, Robert Ford, Peter Jarrett, Glenda Quintini, Douglas Sutherland, Richard Yelland and colleagues in the Education and Skills Directorate, and New Zealand government officials for their valuable comments and suggestions. Special thanks are due to Françoise Correia for statistical research and Mee-Lan Frank for technical preparation.

Table 1. Scoreboard for youth aged 15-24¹, 2001 and 2011

	2001			2011		
	New Zealand	EU ²	OECD ²	New Zealand	EU ²	OECD ²
Employment rate (% of the age group)	55.4	40.2	43.3	49.9	33.4	37.8
Unemployment rate (UR) (% of the labour force)	12.1	16.5	14.5	17.3	22.8	19.0
Relative UR youth/adult (15-24)/(25-54)	2.9	2.5	2.6	3.5	2.7	2.7
Unemployment to population ratio (% of the age group)	7.6	7.3	6.7	10.4	9.0	8.1
Incidence of long-term unemployment (% of unemployment)	8.7	25.4	18.7	3.9	28.0	22.1
Incidence of part-time work (% of employment)	37.3	16.8	20.6	39.6	25.4	27.9
NEET rate ³ (% of the age group)	11.1	12.0	12.3	12.7	11.7	12.3
School drop-outs ⁴ (% of the age group)	36.6	19.9	22.7	33.7	15.1	19.6
Relative UR low skills/high skills ⁵ (ISCED<3/ISCED>3)	2.0	2.6	2.5	1.8	2.3	2.2

Note: UR: unemployment rate; NEET: neither in education nor in employment or training; ISCED 3: international standard of education referring to upper-secondary education.

1. Except 16-24 for Iceland, Spain, Sweden, the United Kingdom and the United States.
2. Unweighted average of the 21 EU and 34 OECD countries.
3. First year exceptions: 2002 for Austria and Ireland, 2003 for Estonia, Finland and Slovenia, 2004 for New Zealand. Yearly data are represented by Q1 for all OECD countries except Australia and New Zealand, for which May and Q2, respectively, are used.
4. Share of youth aged 20 to 24 not in education and without an ISCED 3 educational attainment; 2004 and 2009.
5. 1999 and 2009.

Source: OECD project on Jobs for Youth (www.oecd.org/employment/youth); OECD (2012), *Education at a Glance*; OECD estimates from National Labour Force Surveys.

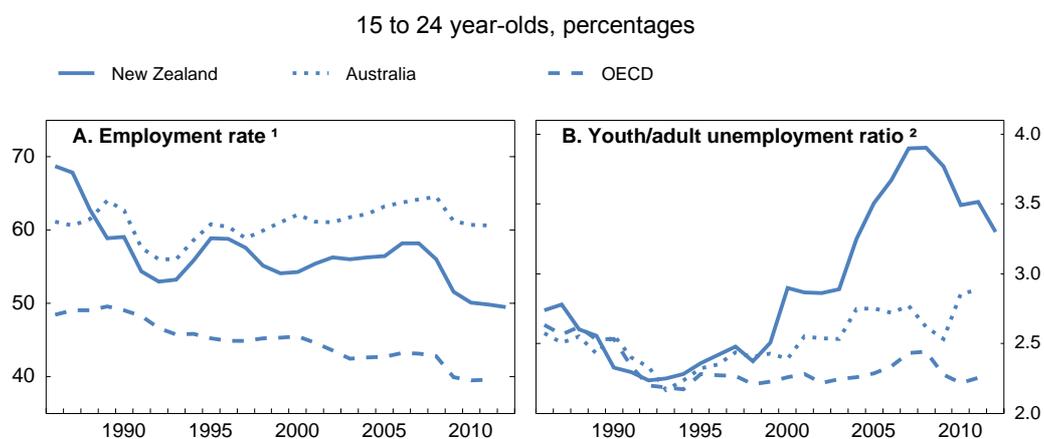
education without completing a school-level qualification, which seems far too high for the needs of a productive economy with a high level of social capital. Many of them will get trapped in chronic joblessness and a cycle of poverty that risks becoming multi-generational. Population ageing, macroeconomic adjustment and slower trend growth will require a significantly more education-oriented youth culture.

Unemployment

Unemployment among those aged 15 to 24 halved from close to 20% in the early 1990s to 10% on the eve of the crisis, a laudable achievement. But this improvement was considerably smaller than that of NZ adults (including many immigrants), and the reversal since then has been sharp with the rate back up to 19% by end-2012. Youth unemployment as a ratio to adult unemployment has also risen much faster in New Zealand since around the turn of the millennium than in Australia and in the OECD on average (Figure 1, Panel B). Employment rates of youth, conversely, are high compared to the OECD average, though lower than in Australia (Figure 1, Panel A). This reflects rapidly rising youth participation and by the fact that more youth work and study simultaneously than elsewhere. Another positive feature is a much lower (and falling) incidence of long-term unemployment among NZ youth than in most other OECD countries.

As elsewhere, education appears to be the best protection against unemployment for youth and adults alike. However, the penalty to lower qualifications in the form of unemployment risk has declined markedly since the previous downturn in 1998, even if it has slightly rebounded since the crisis (Figure 2), and it is now lower than elsewhere in the OECD (Table 2). This could reflect diminishing marginal employment gains from rising educational attainment, as well as skills shortages which have allowed even those with poor qualifications to find work. However, cyclical factors were probably paramount as the 1999-2006 economic boom tightened already taut labour markets, bidding in many marginal workers. The same phenomena may help to partly explain relatively low pecuniary returns to tertiary education, discussed below.

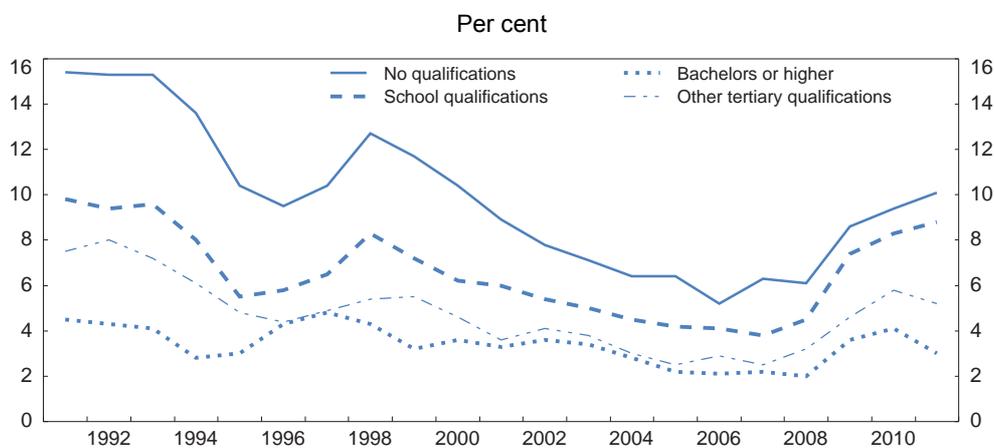
Figure 1. Youth employment and unemployment indicators



1. Employed as a percentage of total population in the age group.
2. Unemployment rate of youth (15-24) divided by unemployment rate of prime-age adults (25-54).

Source: OECD Labour force statistics database.

Figure 2. Unemployment rates of the population aged 15 and over by highest qualification



Source: Education COUNTS database.

Table 2. Youth unemployment rates (15-24) by schooling and gender

	2011								
	Overall		Schooling ¹			Gender		Age	
	2007	2011	Below upper secondary level	Upper secondary level	Tertiary and advanced programmes	Men	Women	15-19	20-24
New Zealand	10.1	17.3	17.2	9.1	11.8	18.2	16.1	25.7	12.2
Australia	9.4	11.3	14.7	7.1	4.1	11.9	10.8	16.1	8.3
Canada	11.2	14.2	22.3	11.7	8.4	15.9	12.4	19.5	10.9
France	19.1	22.1	38.1	19.0	13.7	21.2	23.2	29.5	20.4
Germany	11.7	8.5	16.3	7.2	6.6	9.1	7.8	10.0	8.0
Norway	7.3	8.6	13.6	5.4	4.3	9.3	7.9	11.2	7.2
United States	10.5	17.3	32.7	16.8	7.8	18.7	15.7	24.4	14.6

1. 2010, unemployment rates for ages 20-24.

Source: Calculations from Education directorate database and OECD Labour database.

Average gains in employability diminish with successive levels of qualification (as wages also rise). One NZ anomaly, however, has been *greater* unemployment on average among youth with tertiary and other advanced qualifications than for those with only a high school diploma (Table 2). Though relatively many youths with post-secondary, non-tertiary qualifications (ISCED 4) are included in this category in New Zealand, this factor would be expected to reduce its employment payoff but not erase it. Young women experience lower rates of unemployment than their male counterparts, as in other countries shown except France. High NZ youth unemployment is concentrated among 15-19 year-olds, whose unemployment gap with 20-24 year-olds is greater than elsewhere. However, this may again be in large part due to a high participation rate by students.

Job turnover

An important feature of youth transition is the dynamics of initial job search. The NZ transition process is relatively smooth because of the traditionally low likelihood and short duration of unemployment spells. The OECD's 2008 *Jobs for Youth* study (OECD, 2008a) estimated the average time lag between the end of schooling and the start of an initial job for NZ youth at around five months, compared with 1½ to 2 years in the other OECD countries examined. These intervals are likely to have lengthened since the recession. But the NZ youth transition is also marked by a high rate of job mobility during the first few years of labour-market participation (Table 3). The share of low-skill youth (about one-third at the time of the *Jobs for Youth* study) whose first job is part time or temporary and often casual in nature have been increasing over time, though the majority of job changes are voluntary (OECD, 2008a) and the result of deliberate decision-making strategies rather than dysfunction (Vaughan and Boyd, 2005). Furthermore, first jobs are frequently unrelated to subject areas in which young people have gained their qualifications, though many in the end find jobs for which they are suited.

“Job-hopping” during initial employment may be efficient if it is the outcome of a matching process whereby youths try out different alternatives before a more stable choice is made, especially where information asymmetries are high, i.e. employers know little about youths' skills and youth know little about prospective jobs. The downside is that frequent job changes, initial working out of field and tenuous relationships to jobs provide little possibility for on-the-job training, with adverse effects on development of skills (OECD, 2008a). Also, job turnover is not costless to firms, who incur fixed costs of search and retraining each time a worker needs to be replaced. Though on balance higher labour market churn may be neutral, with both advantages and disadvantages, the real concern is with the group of young people who do not gain any secure attachment to the workforce and have no useful educational qualifications. They

require more focused career advice and clearer vocational pathways while still at school in order to be able to access on-the-job skills development immediately upon transitioning to work.

Table 3. Average tenure rates in initial jobs
Jobs held per year of experience, by age group

		2000-05	2006-11
France	15 to 19	1.07	1.01
	20 to 24	0.59	0.55
Germany	15 to 19	0.64	0.66
	20 to 24	0.38	0.40
Norway	15 to 19	0.68	0.75
	20 to 24	0.48	0.49
United Kingdom	15 to 19	0.87	0.80
	20 to 24	0.43	0.40
New Zealand	15 to 19	1.47	1.45
	20 to 24	1.36	1.36

Note: Average job tenure rates are a proxy for turnover rates, i.e. the number of workers who had to be replaced as a ratio to the total number of workers in a given period.

Source: Statistics New Zealand and OECD Database on Employment; OECD calculations.

Non-standard work

Youth part-time work has been rising in most OECD countries, though its incidence remains far higher in New Zealand, likely skewing upwards the NZ youth employment rate (Table 1). Mixed education-work states are accordingly common among NZ youth. Fewer than half of those aged 15-19 are engaged in education only, with a fair number working part-time and studying full-time (Figure 3, Panel A). A similar pattern can be seen in Denmark, the Netherlands, Iceland, Australia, Switzerland and Canada. NZ teens also show somewhat higher work-only states than those in peer countries, whereas children in Europe and Japan tend to focus more exclusively on their studies and in that sense are shielded from unemployment but pay the price of having no work experience when they graduate. Older youth aged 20-24 unsurprisingly have lower enrolment rates than do teens and higher work-only rates in all countries, but New Zealand again shows a relatively low school-only rate, with work-school combinations only slightly more prevalent than elsewhere; conversely, work-only rates are comparatively high (Panel B). Full-time enrolment by older youth may be lower than in Europe because tertiary education can be completed much faster (in Spain, Italy or France, for example, few graduate before 22-23, while it is roughly 20-21 in New Zealand) and because of the lower unemployment rate.

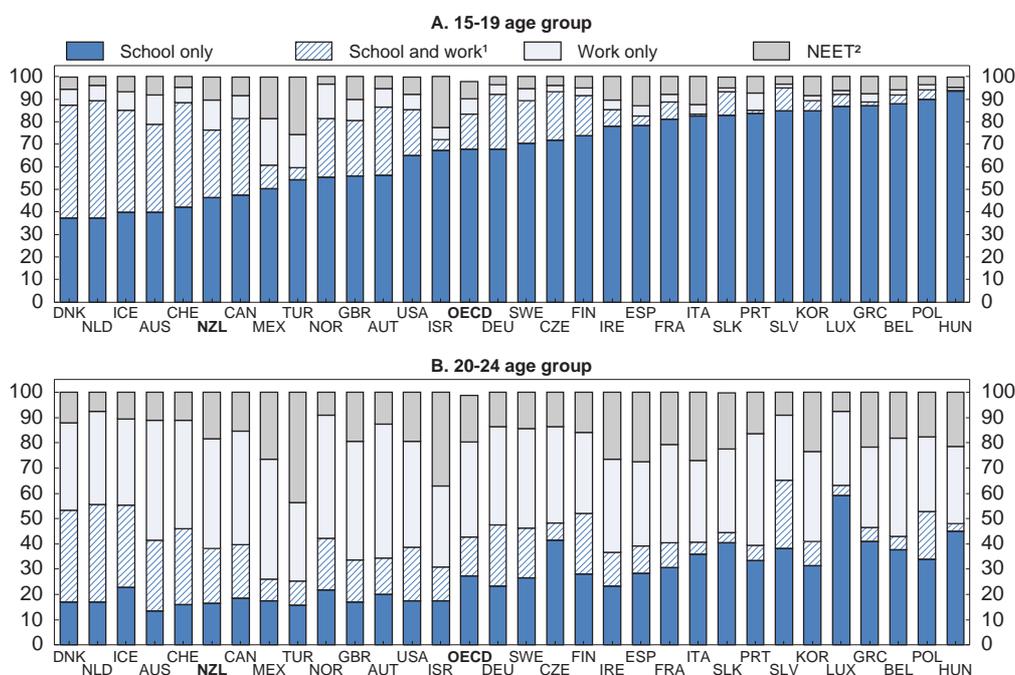
Joblessness

Unemployed youth not having or choosing the option of going back to (or staying in) school to improve their chances in a bad job market may slip into prolonged joblessness and eventual withdrawal from both work and education, or NEET (not employed nor in education or training). In all countries NEET mainly affects older youth. But even though NZ long-term youth unemployment is among the lowest in the OECD, its NEET rate is close to the OECD average (Table 1 and Figure 4). This may reflect that NZ unemployment rates include full-time students who are also seeking part-time work, so are a less useful measure than NEET in capturing youth inactivity. Also, NZ NEET rates have risen more over the past decade than in the OECD on average (Table 1). It should be noted that NEET includes all jobless persons who are not in education or training, without reference as to whether they are officially looking for work. Because the line between unemployment and inactivity is often blurred for young people with

limited access to benefit systems, it is a better measure of youth joblessness and disadvantage more generally.

Figure 3. **Percentage of 15-24 year-olds in education and not in education**

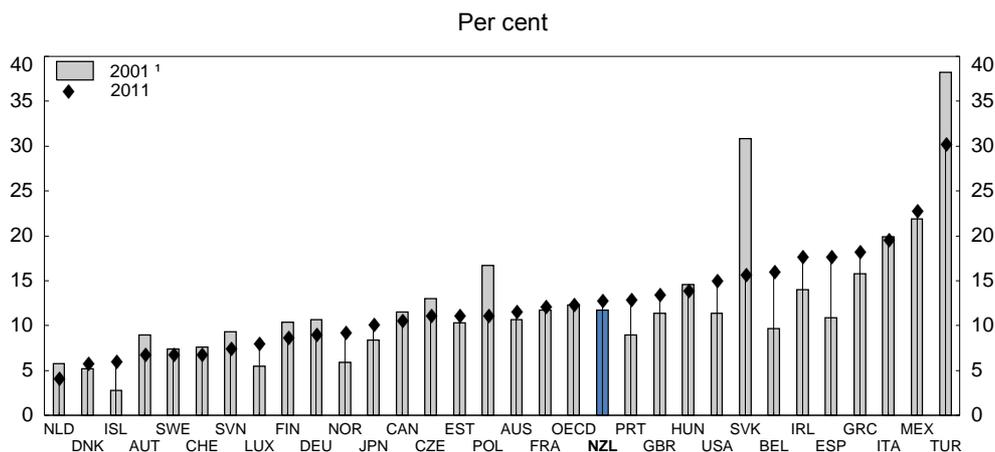
By 5-year age group and work status, 2010



1. In the labour force (employed or unemployed).
2. NEET are people who are neither employed nor engaged in education or training.

Source: Calculations from Education at a Glance 2012, Table C5.2a.

Figure 4. **NEET rate of youth aged 15-24 across OECD countries**



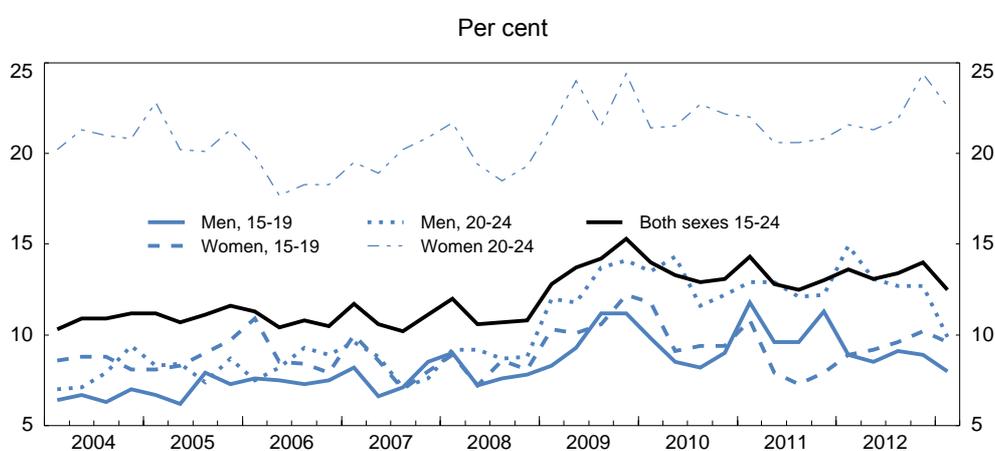
Note: NEET denotes persons neither in education nor in employment or training. Because of distortions implied by school holidays, yearly data are represented by Q1 for all OECD countries except Australia and New Zealand, for which May and Q2, respectively, are used.

1. 2002 for Austria and Ireland, 2003 for Estonia, Finland and Slovenia, 2004 for New Zealand.

Source: OECD (2013), Education at a Glance and OECD estimates from National Labour Force Surveys.

Part of NEET may be voluntary. Some young people (who can afford it) may choose leisure and travel at the end of studies, and, indeed, this option has been popular in New Zealand. In some countries, youth entering military service gets counted as NEET if labour market statistics cover only civilian jobs. Youth in certain countries may enter in significant numbers into informal labour markets. Others (notably women) may turn to full-time family care-giving responsibilities. In New Zealand, this latter form of disengagement is high as indicated by the much higher NEET level for women aged 20-24 (Figure 5). Until recently, the NZ definition of NEET excluded caregivers, who accounted for nearly one-quarter of the overall rate in 2012, on the logic that they are engaged in unpaid work (Statistics New Zealand, 2011). However, even if young mothers choose to stay home, this does not mean that this will ultimately prove good for them or their children – in the case of sole parents, it can create intergenerational welfare dependency. Young and sole mothers should be a strong focus of policy concern and given the means to resume their education. Recent welfare reforms support such a shift of focus (see below).

Figure 5. NEET rates by gender and age group

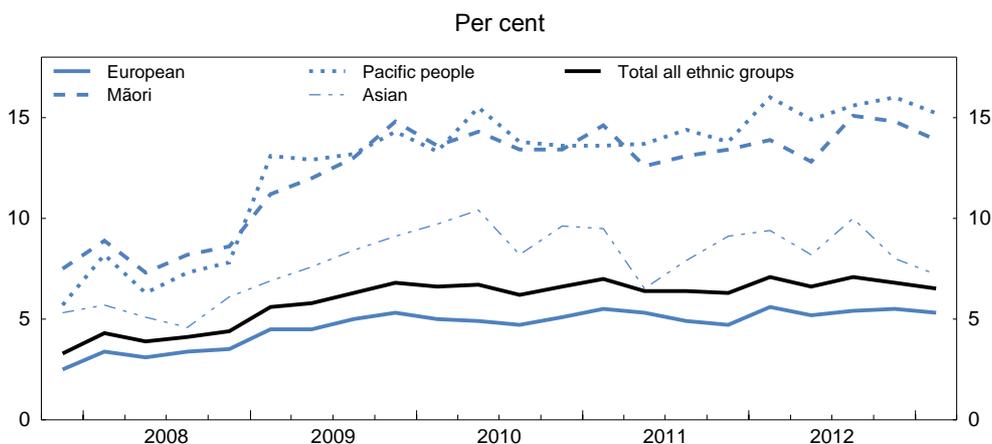


Source: Statistics New Zealand.

Ethnicity and well-being

Although unemployment rates by ethnicity are not available for youth alone, those for the overall working population are much higher for Maori and Pacific ethnic minorities, in particular since the 2008-09 recession (Figure 6). This could reflect a greater vulnerability of individuals with lower educational attainment to economic crises. However, significant differences can be observed even for equivalent qualifications (Figure 7). Youth from disadvantaged socio-economic backgrounds enjoy fewer contacts and less family guidance about educational and career choices. But they may also face implicit discrimination. Research has found compelling evidence of job segregation of Maori: they are overrepresented in lower occupational classes and underrepresented in higher ones, even after taking into account age and qualification differences with Pakeha (people of European descent); there appears to be wage discrimination within occupational classes as well (Sutherland and Alexander, 2002).

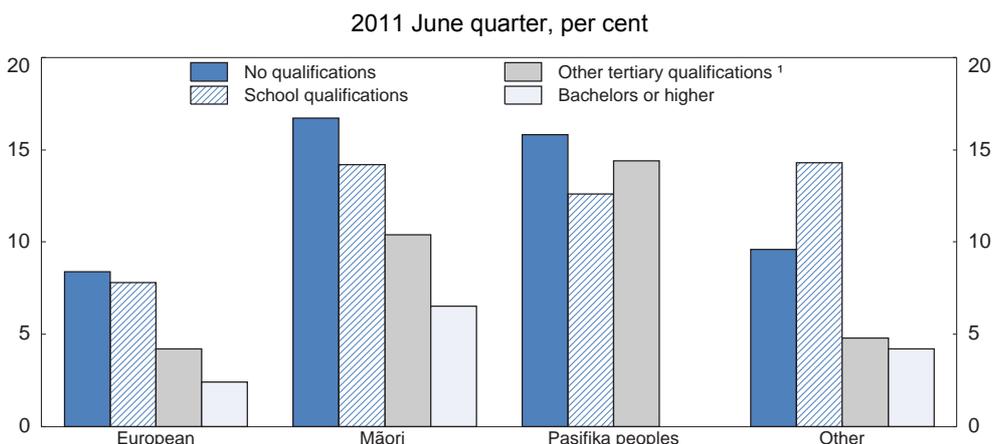
Figure 6. Unemployment rates by ethnic group¹



1. Total response measure of ethnicity.

Source: Statistics New Zealand.

Figure 7. Unemployment rates of the population aged 15 and over by qualification and ethnicity



1. Other tertiary qualifications include all post-secondary qualifications below bachelors-level.

Source: Education COUNTS database.

However, empirical research by Maani (2004) shows that: *i*) lower educational attainment is the single most significant factor explaining Maori income shortfalls; *ii*) market returns to upper secondary and tertiary education are in fact larger for Maori than for Pakeha (the income gap based on educational attainment within the ethnic group is far greater than the income gap across the ethnic groups and when controlling for educational attainment); and *iii*) economic liberalisation has only strengthened the link between educational attainment and employment. Whereas attainment levels since the 1980s have increased for all groups, they did so much faster for the Pakeha than for Maoris; hence public policies have lifted the average but accentuated educational and income gaps, as middle and upper classes capture the lion’s share of education subsidies. The key problem is one of continuing barriers curbing Maori demand for education: financial, socio-economic, linguistic, local, school quality and the already large numbers without school qualifications (Maani, 2004; Box 1).

Box 1. Ethnicity, socio-economic status (SES), gender and the demand for education

A key policy question is what factors determine low educational attainment, and implicitly job market success and lifetime incomes, among Maori and Pasifika peoples, often in a way that is intergenerationally persistent. A general international observation is that adolescents from disadvantaged families tend to leave school at the time when it ceases to be compulsory, which often closes pathways to further education (Maani and Kalb, 2007). It also appears to be the case that boys are more sensitive to initial disadvantage than girls; conversely, girls are better able to escape from the intergenerational SES cycle. However, girls also outperform boys across all OECD countries and social levels, both in terms of test scores and scholastic attainment, for reasons still poorly understood.

Empirical studies based on both NZ longitudinal and OECD cross-country data provide the following insights:

- SES accounts for much of the observed ethnic differences in education and other outcomes, rather than unobservable variables (such as “culture”). Parental resources in early childhood are a key determining factor in NZ secondary-school achievement (Maani and Kalb, 2007). Furthermore, academic performance is one of the key factors influencing the school-leaving choice and should be a policy focus to reduce dropping out.
- Parental education and income levels carry more weight (via early home influences) on test scores than do gender or ethnicity *per se* (Wylie et al., 2008), and it is difficult but not impossible to raise low levels of performance after age 8.
- Much of the PISA performance gap between Maori and Pakeha is in fact attributable to unobservable variables and others that may be less amenable to public policy influence, notably children’s enjoyment of reading and school decile (neighbourhood income ranking), both of which are more influential than the PISA socio-economic index (Lock and Gibson, 2010). Other studies, such as those noted above, implicitly attribute such factors to parental income and education.

A main conclusion of these studies is often that early childhood education (ECE) can help to counteract factors that influence the school-leaving choice over a long period of time, but interventions must be sustained throughout school life. Also, student need should be judged on the basis of interests and actual performance, rather than on social characteristics and prior performance (Wylie et al., 2008). This may in turn have implications for the effectiveness of mechanisms targeting resources to students from low socio-economic groups.

Demographic breakdowns for NEET rates likewise reflect a larger incidence among ethnic minorities. Maori and Pasifika youth are about twice as likely to be NEET as Pakeha, though Pakeha still account for the largest segment of NEET youth. Youth of Asian descent, by contrast, are less likely to be NEET than all other ethnic groups, including Pakeha, reflecting their higher scholastic and job-market success. It should be noted that young Maori and Pasifika women are two to three times as likely as their Pakeha counterparts to become NEET because of caring responsibilities, due to their higher fertility rates, and this accounts for about 30% of the overall differences in NEET rates (Table 4).

Hence, despite the good youth outcomes overall, there is a hard core of youth at high risk of exclusion, mainly due to continuing barriers to their further education, despite the best intentions of policy makers. Structural unemployment and inactivity among disadvantaged youth could harm their well-being considerably and become self-perpetuating, given the evidence in all OECD countries of strong path dependence in job-market outcomes. Young people, despite being naturally more resilient, are still vulnerable to the harmful effects of long-term unemployment, since they are still developing their skills and must compete with more experienced workers. European research shows that long or repeated unemployment spells affect their psychology and confidence quite negatively. Such state dependence tends to abate once they exit the labour market, since discomfort and labour-market ties seem to go together (Ryan, 2001). However, a deterioration of both soft and hard skills and hence severely diminished chances of future job success and income, is the likely result of prolonged joblessness.

Table 4. Youth labour force and education status by ethnicity

Ages 15 to 24, March 2013 quarter

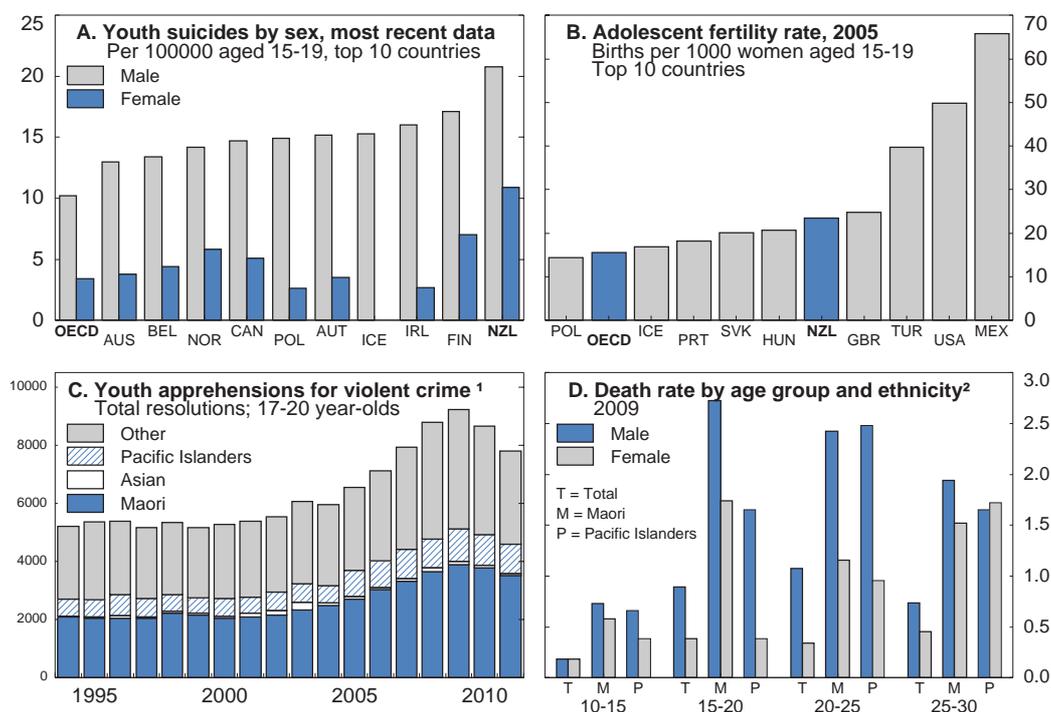
Labour market and education status	Ethnic group ¹				
	Pakeha	Maori	Pacific Islanders	Asian	Total
	Per cent of working age population of the ethnicity				
Employed, in education	20.6	11.0	6.4	10.9	18.6
Employed, not in education	36.1	26.5	27.2	30.9	30.7
Unemployed, in education	3.7	4.6	3.9	4.8	3.9
Not in the labour force, in education	27.9	33.0	39.2	46.5	34.0
Not in employment, education, or training (NEET)					
Unemployed, not in education	4.9	10.6	10.6	2.8	4.9
Not in the labour force, not in education – care giving	3.0	7.7	6.6	-	3.5
Not in the labour force, not in education – not care giving	3.6	6.7	6.1	3.5	4.1
NEET rate	11.5	24.9	23.2	6.7	12.4

1. Total response measure of ethnicity. An individual may be counted in more than one ethnic group.

Source: Statistics New Zealand.

Various social pathologies may also be associated with prolonged joblessness. Even though youth long-term unemployment and NEET rates are not excessively high in New Zealand, its youth display high rates of risky behaviours which weigh more heavily on ethnic minorities (Figure 8). Given the higher Maori and Pasifika fertility rates, their youth population share is projected to grow (Table 5). They now comprise around one third of the school population (40-50% in major urban areas), and over half of the school-age population is expected to identify with multiple and non-European heritages within the next five years (Nusche et al., 2011). It is essential to implement policies to raise the human capital of disadvantaged youth, teach them skills for a changing economy and support them getting into work.

Figure 8. Youth social indicators



1. Apprehension statistics give the number of apprehensions of offenders and how such apprehensions were resolved. An apprehension means that a person has been identified by police as the offender and, where appropriate, dealt with in some manner, such as warned, prosecuted, referred to youth justice family group conference, or diverted. Violent crime includes homicide and related offences, acts intended to cause injury, sexual assault and related offences, dangerous or negligent acts endangering persons, abduction, harassment and other related offences against a person, robbery, extortion and related offences.
2. Percentage of deaths in the corresponding population.

Source: Ministry of Health, Statistics New Zealand and OECD (2009), Doing Better for Children.

Table 5. National ethnic population projections by age group¹

As a percentage of total population

		0-14	15-39	40-64	65+	Per cent of total population
Pakeha	2006	14.2	22.9	23.4	10.2	70.7
	2026	11.0	18.6	18.8	14.0	62.5
Maori	2006	4.7	5.4	3.0	0.6	13.8
	2026	4.6	5.5	3.3	1.2	14.6
Asian	2006	1.8	4.3	2.4	0.4	8.9
	2026	3.0	5.5	4.2	1.6	14.2
Pacific Islanders	2006	2.4	2.6	1.3	0.3	6.6
	2026	3.0	3.4	1.7	0.6	8.7
Total	2006	23.2	35.2	30.1	11.4	100.0
	2026	21.6	33.0	28.1	17.4	100.0

1. Based on the estimated resident population of each ethnic group at 20 June 2006.

Source: Statistics New Zealand.

The youth labour market: demand-side issues

The deteriorating labour-market performance of young people, relative to that of adults, may seem contrary to their declining population shares and higher levels of education compared with older cohorts. The demand for youth labour, however, is more strongly affected by cyclical conditions and structural shifts. Labour market regulations can also affect youth disproportionately. Increases in the minimum wage, for instance, make it harder for inexperienced and unskilled workers to find work, and tightening of employment protection, which increases employers' risk from hiring inexperienced workers, does likewise. The NZ government has taken steps to address these issues, via the Starting Out wage and the 90-day trial period.

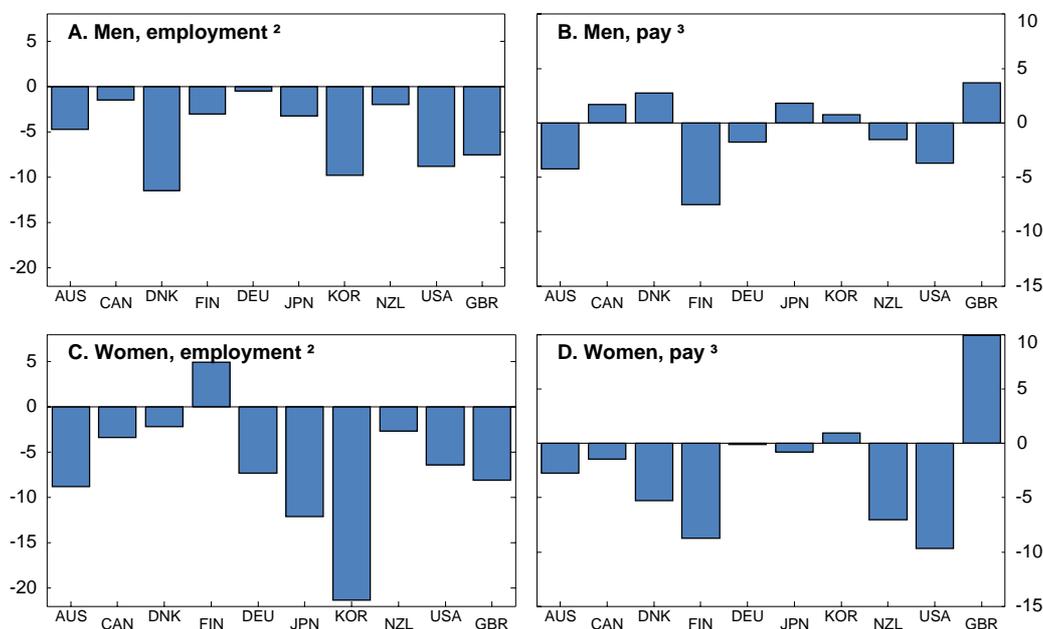
Pay and employment: some common OECD threads

The common OECD shocks of globalisation and technological change, notably the IT revolution, have deeply affected the pattern of labour demand, with *a priori* ambiguous impacts on youth. They have led to a structural decline of manufacturing employment, where older male workers are overrepresented, and the corresponding rise of services, which are more intensive in the use of youth and women. At the same time, these shocks have induced skill-intensive labour demand, both in pursuit of non-price competitiveness as a means of business survival and as a complementary input to the expanding new technologies being used to boost productivity. Robotisation (technology) and outsourcing (globalisation) have directly reduced demand for unskilled labour, fuelling the rising demand for technological skills. Insofar as experience is a means of gaining skills, youths are disadvantaged by the skill bias in labour demand, which appears to have dominated the positive effect of the rise in services.

Macroeconomic shocks have interacted with structural shocks. It is often thought that youth unemployment has greater cyclical amplitude than that of adults (Ryan, 2001). Young people, like immigrants, are marginal workers ("last-in, first-out") and, lacking an established track record, young recruits represent a greater hiring risk, contingent on the state of the economy.

Youth employment rates have followed a declining trend for at least the past couple of decades, most importantly due to rising tertiary enrolment required by the labour market. Over the past few years, the trend was strengthened by job losses due to the crisis, which reduced the opportunity cost of studies. Since 2000 employment rates of NZ men and women aged 20-24 have fallen relative to 25-54 year-olds of the same gender, as in other countries, and relative pay has often declined as well (Figure 9). Relative employment declines for youth have been smallest in: New Zealand, Canada and Australia (for men), which have flexible labour markets and already high youth employment rates; in Germany and Japan (men), which have strong school-to-work transition institutions; and in Finland (women and men) where youth workers experienced notable declines in their relative pay.

Figure 9. Changes in relative pay and employment rates of young adults

Difference between 2011¹ and 2000¹, percentage points

1. Starting year for pay: 2006 for United Kingdom. Ending year for pay: 2010 for Australia, Denmark, Finland and Germany.
2. Difference between employment rates of 20-24 and 25-54 year olds.
3. Difference in ratio of 20-24 year-old pay to 25-54 year-old pay.

Source: OECD Database on Average Earnings by Gender and Age, OECD, Employment database and OECD calculations.

The institutional setting

Tax and benefit rules affect youth differentially by setting explicit or implicit wage floors. In New Zealand, where social security contributions do not exist, the tax wedge on low-wage earners is one of the OECD's smallest (OECD, 2012d) and could be an important element in maintaining the demand for low-productivity workers such as youth. Yet, social benefits (notably to young parents) can hurt youth employment by setting reservation-wage floors that are high relative to effective productivity levels. Indeed, as in several other OECD countries, unemployment benefits can be claimed without any prior work experience, thereby covering the initial period of job search, and with no limit in time. In this sense they are generous, and replacement rates can also be quite high. Yet recent reforms have reinforced the principle of mutual responsibility and the role of activation policies, discussed further below.

Regulations on pay also matter. Progressive withdrawal of the youth derogation from the legal minimum wage has, all else equal, increased youth unemployment (Box 2).

Box 2. Youth minimum-wage reform

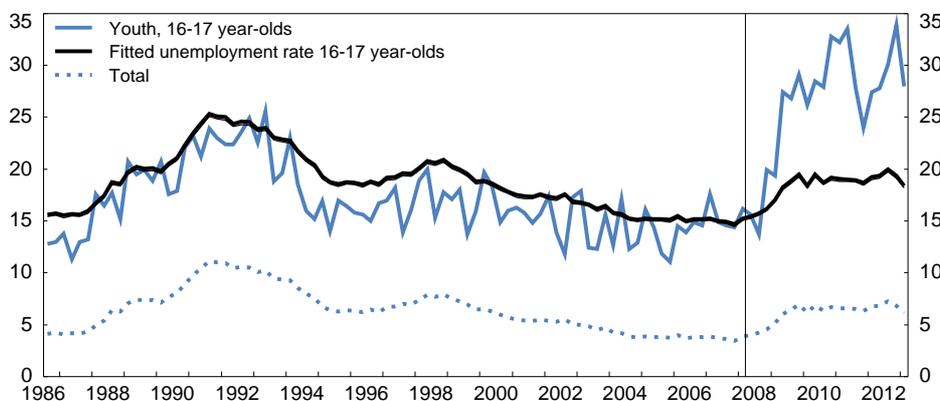
New Zealand has had three types of minimum wage: the adult minimum, a youth or "new entrants" minimum and a training wage. The age borderline and relativities between the first two have been subject to policy shifts, while the third is explicitly for trainees and apprentices. The adult minimum wage level, serving as the anchor for the youth minimum, is periodically adjusted upwards, while the training wage has typically been equal to the youth minimum.

The youth minimum wage was increased in two large steps in 2001 and 2008. This provided a “natural experiment” for examining the employment impacts of youth sub-minimum wages that were explored in two papers by Hyslop and Stillman (2004 and 2011). Originally, the youth minimum wage had been set at 60% of the adult level for 16 to 19 year-olds. A major reform in 2001 raised it to 80% and restricted it to 16 to 17 year-olds, resulting in a 41% (phased) increase in the minimum wage for this group; 18-19 year-olds moved to the adult minimum wage, resulting in a 69% (immediate) increase. A second reform in 2008 abolished the youth minimum wage altogether, replacing it by a “new entrants” minimum wage for 16 to 17 year-olds, equal again to 80% of the adult minimum wage but effective for only three months or 200 hours of employment, after which the adult minimum applies. This minimum wage was largely ignored by businesses and most 16 and 17 year-old workers were moved onto the adult minimum wage, resulting in a 28% increase in the minimum wage for this group.

Although the effective minimum wage increase was larger for the 2001 reform than for the 2008 reform, the Hyslop and Stillman studies show that the 2001 reform had no significant adverse impacts on youth employment, at least in the short term, whereas the 2008 reform led to a stronger fall in employment of 16-17 year-olds. This was attributable to three factors, namely that the 2008 reform: *i*) moved 16 and 17 year olds onto the adult minimum wage, possibly encouraging employers to replace them with more mature workers; *ii*) applied to a much larger proportion of 16 and 17 year-olds than did the 2001 reform (given that the pre-2001 youth minimum had often not been binding); and *iii*) took place just prior to an economic downturn. These factors are hard to disentangle, given the methodology used (a comparison with outcomes in the nearest age groups not affected by the reforms). Nevertheless, following the 2001 reform, there is evidence of a decline in educational enrolment and an increase in youth unemployment, inactivity and benefit receipt, suggesting that while the increase in youth minimum wages increased teenagers’ labour supply, it was not matched by as large an increase in employers’ demand.

A much rougher, though illustrative, analysis compares the actual rise in the unemployment rate of 16-17 year-olds in the period following the 2008 reform with the counterfactual of an unchanged historical statistical relationship between the 16-17 year-old and adult unemployment rates (Crampton, 2012). It suggests a huge adverse impact of the reform (Figure 10), but it is more likely that the relative price effect of the reform merely reinforced the impact of the macroeconomic shock. Furthermore, most 16 and 17 year-olds identified as unemployed are in full-time study (and seeking part-time work alongside study). This interaction would also help to explain the larger impact of the global crisis on NZ youth unemployment rates than elsewhere (except the United States). The same methodology shows no perceptible impact on youth unemployment from the (much larger) 2001 reform, which itself came on the cusp of a major labour demand boom, drawing many youths into jobs.

Figure 10. Unemployment rates of 16-17 year-olds versus adults



Note: The vertical line represents the implementation of the 2008 minimum wage increase.

Source: Statistics New Zealand.

Though the persistently high rates of youth unemployment should make the option of reinstating the youth minimum wage (perhaps in a phased manner) one well worth exploring, the political economy is unfavourable: unions protest that the youth minimum is discriminatory and exploitative, and will lead to youth poverty, and popular opinion appears to agree. In this context it may be worth recalling that Hyslop and Stillman (2004) found an eventual *increase* in youth poverty following the large 2001 boost to the youth minimum wage because it provided incentives to stop studies, while raising excess supply of youth labour. More research and experimentation (e.g. pilot studies) may thus be needed to determine the costs and benefits of youth sub-minimum wages. International research has shown, for example, that in Spain the impact of minimum wages on the youth labour market is more likely to be negative if there is no separate sub-minimum for younger workers and that in the United States and United Kingdom the legal minimum age for school leaving is a much more important determinant of continued school participation for 16-17 year-olds than minimum wages (Croucher and White, 2011).

The New Entrants minimum wage is being replaced in 2013 with a minimum Starting Out wage, which will allow three groups of young people to be paid 80% of the adult minimum wage for the first six months of their employment: i) 16 and 17 year-olds in their first six months of work with a new employer; ii) workers aged 18 and 19 who have been paid a benefit for six months or longer, and who have not completed six months of continuous work with any employer since starting on benefit; and iii) workers aged 16 to 19 undertaking at least 40 credits a year of a recognised industry training programme.

Earnings of NZ youth improved relative to the adult average in the nearly two decades before the crisis, as minimum pay rates converged to their adult counterparts' with minimal adverse impacts on employment, largely thanks to buoyant labour markets in the latter half of this period. But their relative position has deteriorated since then. Maori youth earnings, nonetheless, surpassed those of total youth in the run-up to the crisis, though they have since returned to parity. Maori youths' labour supply appears to be more responsive and demand for education less so with respect to wage changes and labour-market conditions than others' (Table 6).

Table 6. Youth relative wages

Average weekly wages of 15-24 year-olds relative to total adults aged 25 to 64

	European/Pakeha	Maori	Pacific peoples	Total ethnic groups
1998	0.52	0.51	0.47	0.51
2006	0.54	0.57	0.53	0.53
2007	0.50	0.50	0.55	0.48
2010	0.48	0.49	0.50	0.48
2012	0.51	0.51	0.58	0.51

Source: Statistics New Zealand.

Finally, New Zealand has among the OECD's most flexible labour markets, thanks to relatively low rates of employment protection legislation (EPL) and low coverage for collective bargaining agreements (OECD, 2012b; Box 3). This has avoided the need for many (involuntarily) temporary contracts for youth, which are common in countries with tight restrictions on employment contracts (e.g. France and Italy), and which tend to suffer long youth transitions, inefficient and unfair insider-outsider dualism in the labour market, high youth job precariousness and meagre youth training wages.

Box 3. Employment contract reform

A major labour market reform, the 1991 Employment Contracts Act (ECA), freed workers from compulsory unionism and mandatory collective bargaining, thus decentralising private wage bargaining to the individual firm level. Even flexible job markets such as in the United States did not give workers and employers such contracting freedom at the time. This institutional feature is an important source of the NZ youth labour market's strength and flexibility, though partly offset by legislated minimum wages. The ECA was subsequently replaced by the 2000 Employment Relations Act (ERA), which aimed to rebuild productive employment relationships through the promotion of good faith in all aspects of the employment environment and relationship by promoting collective bargaining (amongst other things).

A less desirable feature of both the ECA and ERA, however, was that employees retained the right to bring a personal-grievance case against employers for "unjustified dismissal", a restriction whose cost is initially borne by employers but that is partially shifted to workers in the form of lower wages and employment levels, especially those with inelastic supply such as less able, inexperienced and lower-skill workers (Baird, 1996). The OECD *Jobs Study* warned of the undesirable employment effects of unjustifiable dismissal restrictions in employment contracts. The United States, as a counterexample, gives workers such a right only in the case of discrimination and other illicit behaviour, and the resulting ease of hiring and firing is thought to be an important facilitator of its high level of business risk-taking and innovation.

In 2009, the NZ government, wishing to ease this restriction, introduced a trial period of 90 days or less for new employees of firms with fewer than 20 employees and in 2011 extended the provision to all firms. It was hoped that reducing the cost of firing non-performers would encourage employers to take a chance with new hires, notably youth. While unions argue that the new rules could inhibit efficient job turnover, as employees may be afraid to expose themselves to layoff risk by moving to a new job, these arguments have less force for youth just entering the job market. Preliminary data show that on average, hiring by SMEs was almost 6 percentage points higher than expected in the quarter following the 2009 introduction of the measure (NZIER, 2011), though more analysis is needed to establish a causal link.

Youth activation measures

The NZ government has successfully switched from passive unemployment benefits to activation policy (OECD, 2008a). Since the labour market reform of the late 1980s, employment services have been integrated with benefit administration through the “mutual obligations approach”, requiring job search or training in exchange for benefits. More recently, subsidised employment schemes have given way to educational upgrading of labour-market programmes. Under the new “investment approach”, New Zealand explicitly aims to get youth and unskilled unemployed into education, training or work-based learning in recognition of the long-run benefits of acquiring qualifications, with less emphasis on their immediate job placement. A new Youth Services puts this into practise by incentive payments to clients and contracting with providers having good local knowledge (Box 4). The recent welfare reforms as they apply to teen parents provide “wrap-around” support (intensive, individualised case management) and incentives for teen parents to re-engage in education, and training or work based learning, to reduce their likelihood of long-term benefit dependence and to improve long-term outcomes for them and their children.

Box 4. Youth activation approaches

The Youth Services

Youth Services (YS) is a new, central government funded, community-based approach to fighting failure among 16 to 18 year-olds, the first component of the government’s welfare reform (see OECD, 2013a). The Ministry of Social Development (MSD) assigns a provider, or typically a range of providers including NGOs, private sector and iwi (tribes) with strong links to the community, to all at-risk NEET youth receiving public financial support. MSD may identify clients, or the provider may find them. Student identification numbers have been assigned, allowing the education system to co-operate across the country and with social services in finding those of whom the school system has lost track following family moves. Coaching and mentoring services complement youth training programmes, as many problems are also attitudinal. Training, counselling and job-placement services are contracted out to providers under a tendering process, with follow-up monitoring, in the hope of enforcing more efficient provision.

The following conditions are imposed on beneficiaries and on the providers charged with service delivery:

- A youth payment is available to youth aged 16-17 with no dependents. Recipients must participate in education, training or work-based learning, and complete a budgeting course. Those pursuing studies may additionally receive a student loan and a grant to cover living expenses.
- There is also a young parent payment available to parents aged 16-18. Recipients face the same obligations as the above once their youngest child reaches the age of one and are additionally required to complete a parenting course and ensure regular medical check-ups for their children. Those pursuing education, training or work-based learning with children under five may receive a Guaranteed Childcare Assistance Payment to cover the cost of childcare.
- Providers are engaged on outcome-based contracts. Funding will be renewed on condition of youth completion of their training programmes and of subsequent sustained employment. Payment levels are directly proportional to the level of “risk assessment” (carried out by MSD) that is attached to the client based on his/her profile. These risk ratings can be reviewed at the request of providers.

Whilst the results of evaluations are not yet available, early indications show that young people engaging with the service are seeing benefits from the wrap-around services provided. Discussions with several providers suggest that YS is proving successful for addressing problems of youth at risk who are still in school. For NEET youth, however, more flexibility in the funding conditions might be desirable, as each case is unique and risk assessments of youth developed by central government theoretical modelling may often be less accurate than provider judgements. At the same time, getting incentives right for contracted private providers and correctly evaluating their performance is an ongoing challenge (Dormer, 2011). Tendering may create competition among providers, whereas co-operation may be needed for an effective response.

Job Streams

The Ministry of Social Development has furthermore refocused many of its employment assistance programmes to better support the investment approach. Referred to as “Job Streams”, this involved simplifying funding into three key programmes that were considered to provide the best return and reduce the long-term cost of welfare: *i)* Flexi-Wage, a wage subsidy of up to NZD 21 060 per annum for people considered to be at highest risk of long-term benefit dependency; *ii)* Skills for Industry, short job-focused training; and *iii)* First Step Apprenticeships, up to NZD 10 000 per person for apprenticeships and other trades training, to assist with employers’ training costs and other types of support such as pastoral care.

Local initiatives

Successful local experiments have arisen spontaneously through the vision of local leaders. Boven et al. (2011) cites the case of Otorohanga, where in 2004 businesses, frustrated with the outmigration of local youth in search of jobs and their own inability to fill good trades job and apprenticeship offers, launched a suite of projects, with strong support of the mayor, to make young people more attractive to local businesses and *vice versa*. By end-2006, the city had radically reduced youth NEET and unemployment, juvenile delinquency plummeted, businesses cancelled plans to move elsewhere, and the local economy revived. Over the last six years, the full cost of the youth programmes (NZD 70 000) was less *pro rata* than the local council’s pre-2005 annual budget (NZD 15 000) to clean up (now non-existent) graffiti and other petty vandalism. Such initiatives are deserving of closer analysis, with their possible dissemination nation-wide.

A major challenge for youth activation policies is to properly evaluate them. The international academic jury on ALMPs is still out (Card et al., 2010). Doubts about their efficiency – in particular whether they displace jobs and skills away from untargeted youth and provide long-run benefits exceeding the cost of services and support – have increased interest among OECD countries in “upstream” interventions, focused on formal education, with proven benefits for prospective earnings and employment, and for society. The relevant education policies include expanded pre-school programmes, support for higher attainment in general education and vocationally oriented reform in secondary schooling (Ryan, 2001).

Box 5. Recommendations for improving youth labour market policies

- To tackle high youth unemployment, consider: *i)* reinstating the youth minimum wage for 16-19 year-olds and *ii)* extending the 90-day trial period further, say up to six months, for employment contracts.
- Carefully evaluate youth outcomes under the Youth Services benefit, ideally with a two-year window of follow-up, and terminate ineffective policies and/or providers.
- Seek community-based initiatives to reduce youth NEET, and apply successful lessons nationally, while providing expanded funding for training and apprenticeships in high-unemployment areas.

Challenges facing the education system

The quality of youth transitions depends critically on preparatory education. The preceding discussion of youth transition and labour-market issues has highlighted two key challenges for education: *i*) reducing school drop-out rates and shrinking the long tail of underachievers to address the dual problem of low skills and intergenerational poverty; and *ii*) ensuring greater coherence between educational and labour-market institutions to address the structural skills shortage and associated low-productivity problem.

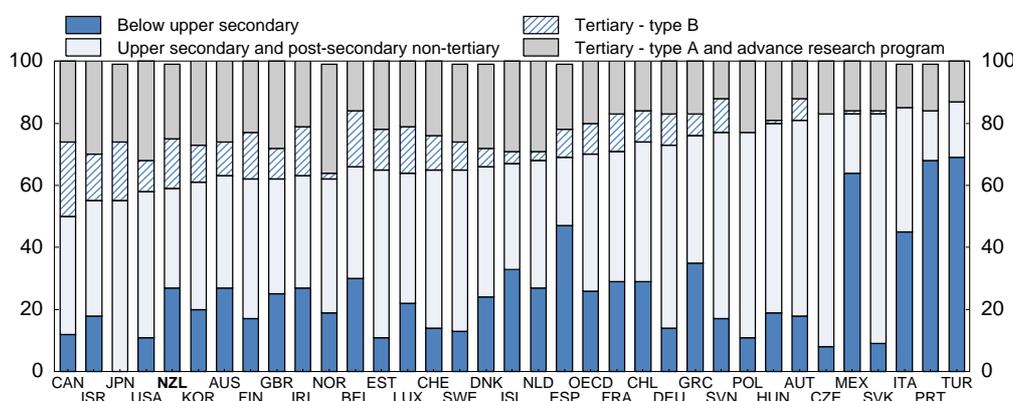
Performance of the system

Attainment

New Zealand is a highly educated nation. Tertiary attainment rates among the adult working-age population are fifth highest in the OECD, just after the United States (Figure 11), and have increased through time, as successive cohorts participate at higher rates. However, this progression has been slower than in the OECD on average, as the tertiary attainment gap between the youngest (aged 25-34) and second youngest cohorts (aged 35-44) for women is only about half as large as in the average OECD country (OECD, 2012c, Chart A1.5). This reflects: *i*) the large number of graduate immigrants; and *ii*) the fact that the enrolment expansion of 1997-2005 was very heavily skewed toward older students (40% of that growth was among the over-40s). University attainment rates may be catching up faster, as the rather high proportion of vocational-type tertiary attainment is heavily influenced by the education choices of the older cohorts and historical policies: younger ones have tended to see greater value in a university degree.

Figure 11. Educational attainment of 25-64 year-olds

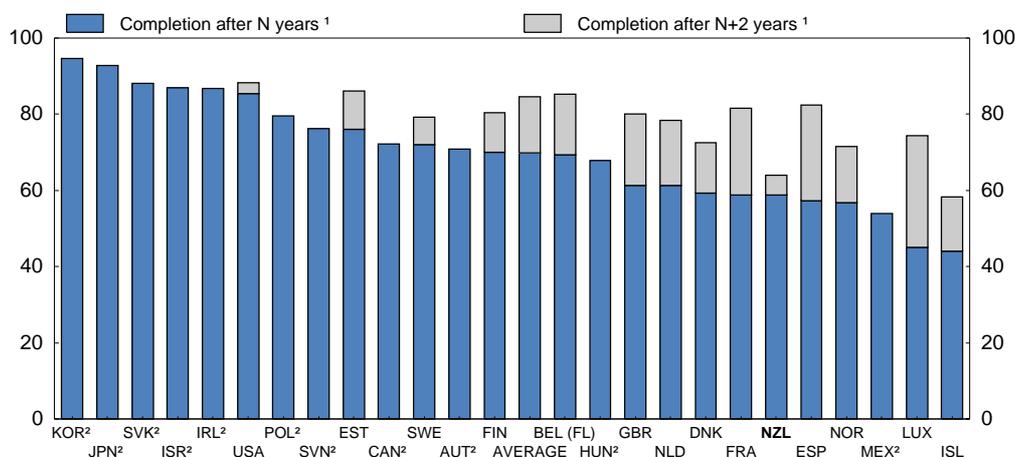
Percentages, 2010



Source: OECD, Education at a Glance 2012, table A1.4.

At the other end of the spectrum, the proportion of those who failed to complete even a high-school diploma is also high, at almost 30%. Upper secondary-school non-completion rates within two years of normal graduation age, at close to 40%, are exceeded by only a few other OECD countries (Figure 12). Although many non-completing school leavers eventually find their way back into education and gain their qualifications, the window of opportunity between ages 15 and 20 has been lost (OECD, 2008a). Moreover, some of the trends have been adverse. Retention rates measured six months beyond the school-leaving age were falling between the end of the Asian crisis in 1998 and the peak of the last business cycle in 2006, most notably for Maori students, and have slightly risen since, suggesting that buoyant labour markets during this period may have diminished the incentive to stay in school for students whose attachment may already have been low.

Figure 12. Successful completion of upper secondary programmes



Note: Upper secondary school completion is defined as attainment of ISCED level 3.

1. N. Is the theoretical duration of the programmes.
2. N+2 information missing.

Source: OECD (2012), *Education at a Glance 2012*, Chart A2.4.

Maori and Pasifika show significantly higher rates of non-qualification than the national average (Table 7), though they have come down more sharply in recent years. According to the Ministry of Education almost one in five NZ students leaves secondary school without formal qualifications (NZ definition; see Annex 1). For Pasifika students it is one in four and for Maori one in three. In addition, more than 80% of Maori and 70% of Pasifika tertiary study is at sub-degree level. Over the past two decades, tertiary participation rates, in particular for university studies, have increased more rapidly for Maori and Pasifika than for Pakeha, albeit from a lower base (Table 8). Female tertiary attainment rates have also been converging to those of males, though women already surpass men in university attainment. On the other hand, ethnic Asians show nearly double the rates of university education of Pakeha, and conversely for VET. Just as for upper secondary school, however, rates of tertiary non-completion are among the highest in the OECD (Figure 13), and higher still for Maori and Pasifika. A driver of this result is high participation in tertiary study by part time, adult second-chance learners, due to New Zealand's open-access approach to tertiary education, and Maori and Pasifika tertiary students, in turn, are more likely to engage in tertiary education as part time, older learners (although advanced level 4 certificate programmes, which are likely to include many of these learners, are excluded from the data presented in Figure 13).

Achievement

PISA results for NZ 15 year-olds in 2009 were characterised by high means but high dispersion as well (Figure 14). New Zealand ranked among the top 10 OECD countries and among the top 20 worldwide in reading, mathematics and science scores. However, in reading literacy, the major focus of that PISA round, among the 11 best performers, New Zealand had a very wide distribution of scores (Panel A). New Zealand, Australia and the Netherlands showed the longest "tails" of poor performers (percentage of students with reading level 1 or lower), though, apart from Shanghai China (a high-end outlier), New Zealand also showed the longest "nose" (those at levels 5 and 6). While Pakeha and Asians were more likely to be at the higher end, Maori and Pasifika were overrepresented at the low end. Girls significantly outscored boys in every country, but the NZ gender gap was above the OECD average. Variability was high within schools, indeed the highest in the OECD, rather than between schools

(Panel B). This indicates that greater efforts are necessary to adapt education to the needs of highly diverse learners within the education system (Nusche et al., 2011).

Table 7. **Distribution of New Zealanders aged 15 and over by highest qualification and ethnic group**

2006, per cent

Gender	Ethnic group ¹	No qualification	School qualification	Level 1-6 post-school qualifications	Bachelors degree or higher	Total group
Male	Pakeha	23.5	29.6	27.0	14.1	100
	Maori	38.5	26.7	18.3	4.9	100
	Asian	10.5	40.1	15.2	27.6	100
	Pasifika	33.4	35.6	13.2	4.2	100
	Total males	22.8	29.2	24.0	13.7	100
Female	Pakeha	22.9	34.4	21.1	15.1	100
	Maori	33.0	30.6	19.0	7.5	100
	Asian	12.3	40.2	13.9	26.9	100
	Pasifika	27.9	38.5	14.8	5.6	100
	Total females	22.1	33.4	19.4	14.6	100

1. Ethnic group includes all of the people who stated an ethnic group, whether as their only ethnic group or as one of several ethnic groups. Where a person reported more than one ethnic group, they have been counted in each applicable group.

Source: Education COUNTS.

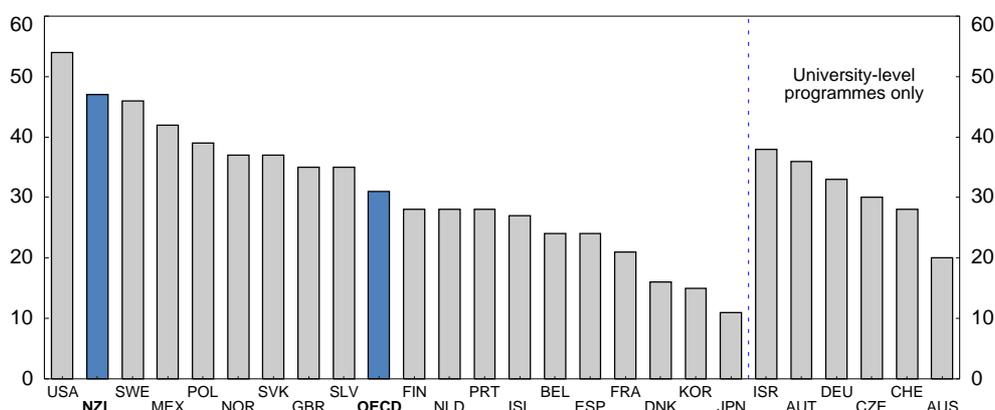
Table 8. **Tertiary participation rates by ethnicity, gender and qualification level for 18-24 year-olds**

Percentage of the ethnic/gender population in the age group

	Certificates 4		Diplomas 5-7		Bachelors' degrees		All degrees	
	2004	2011	2004	2011	2004	2011	2004	2011
Ethnicity								
Pakeha	4.9	4.5	4.7	4.6	18.3	20.3	36.8	37.4
Maori	5.4	6.6	4.0	4.0	8.8	10.4	33.3	32.0
Pasifika	5.6	7.7	4.2	5.2	10.1	12.8	30.6	34.9
Asian	1.8	2.2	2.6	2.9	16.0	23.4	25.5	34.5
Sex								
Females	4.3	4.5	4.9	5.0	20.0	23.1	39.3	41.0
Males	5.1	5.2	4.1	4.1	14.2	15.2	32.9	33.1

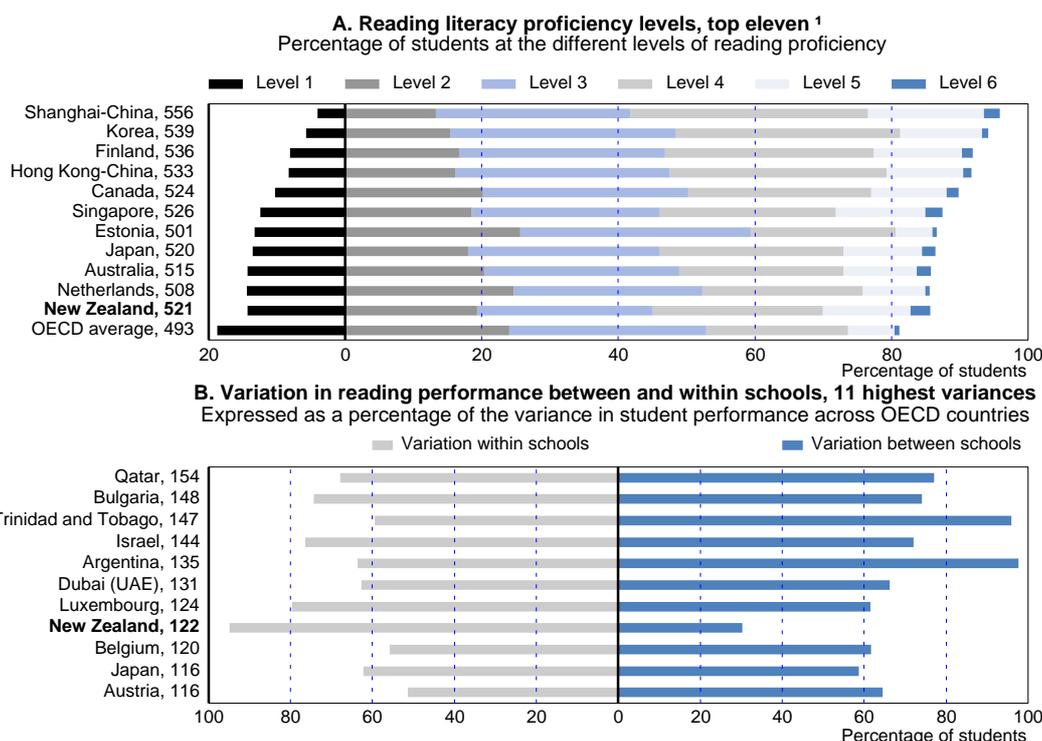
Source: Education COUNTS and Statistics New Zealand.

Figure 13. Proportion of students who enter tertiary education without graduating
2008, percentage



Source: OECD (2010), *Education at a Glance 2010*, Chart A4.1

Figure 14. Reading literacy proficiency levels and variation in reading performance



Note: The data near the country name are the reading score for Panel A and the total variance as a proportion of the OECD variance for Panel B.

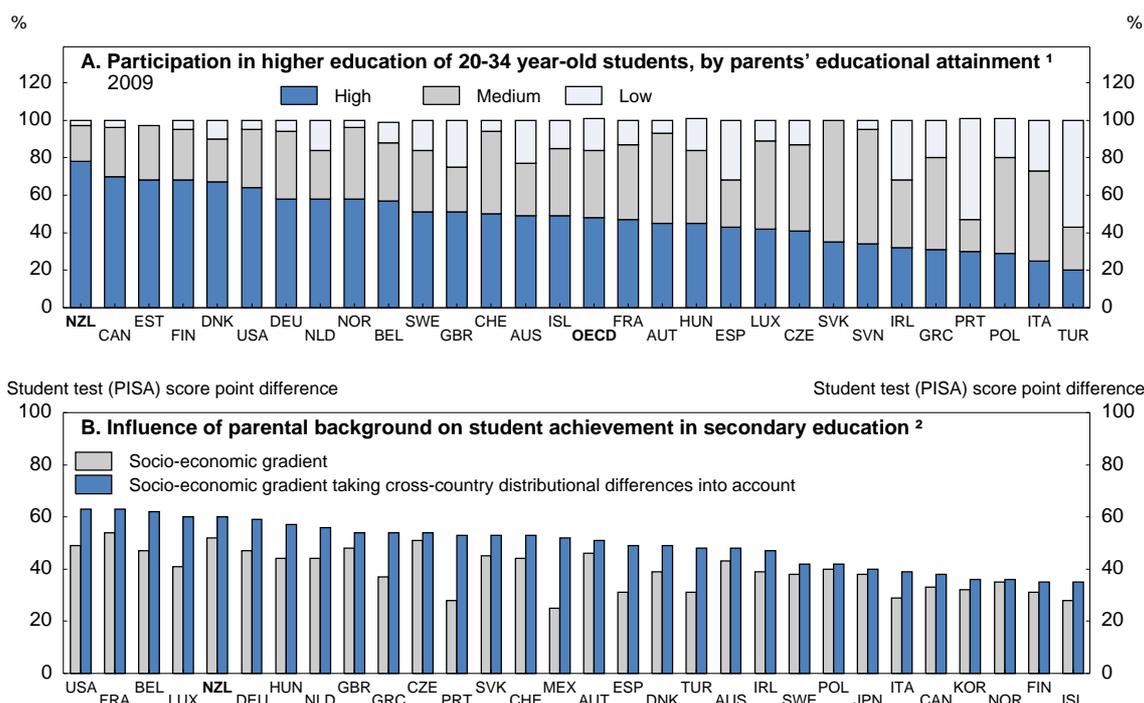
1. Countries are ranked in descending order of the percentage of students at levels 2, 3, 4, 5 and 6.

Source: OECD (2010), *PISA 2009 results: What students know and can do – Student Performance in Reading, Mathematics and Science (Volume 1)* and *Overcoming Social Background (Volume II)*, OECD Publishing.

Inequality in educational outcomes can be seen in other ways. Students participating in tertiary education are themselves much more likely to be children of highly educated parents in New Zealand than in any other OECD country (Figure 15, Panel A). This might be attributable to a “saturation” effect –

namely, the already high population share of tertiary attainments leaving little room for further upward mobility – though New Zealand’s tertiary share does not seem quite high enough for this channel to operate. The PISA “gradient” – the sensitivity of the mean PISA score to a change in the PISA index of student socio-economic background – is even less susceptible to this argument, and New Zealand’s is the second highest (OECD, 2012c), though falling to perhaps fifth highest if adjusting for country differences in income distribution (Panel B). These results seem to mirror the dichotomy observed for attainment rates, i.e. both high numbers of school drop-outs and of tertiary-qualification completers.

Figure 15. Education and parental background



Note: The number of students attending higher education are under-reported for Australia, Canada, New Zealand and the United States as they include only those having attained ISCED 5A, while the other countries include students who attained ISCED 5A and/or 5B. The omission of data on 5B qualifications may understate intergenerational mobility in these countries.

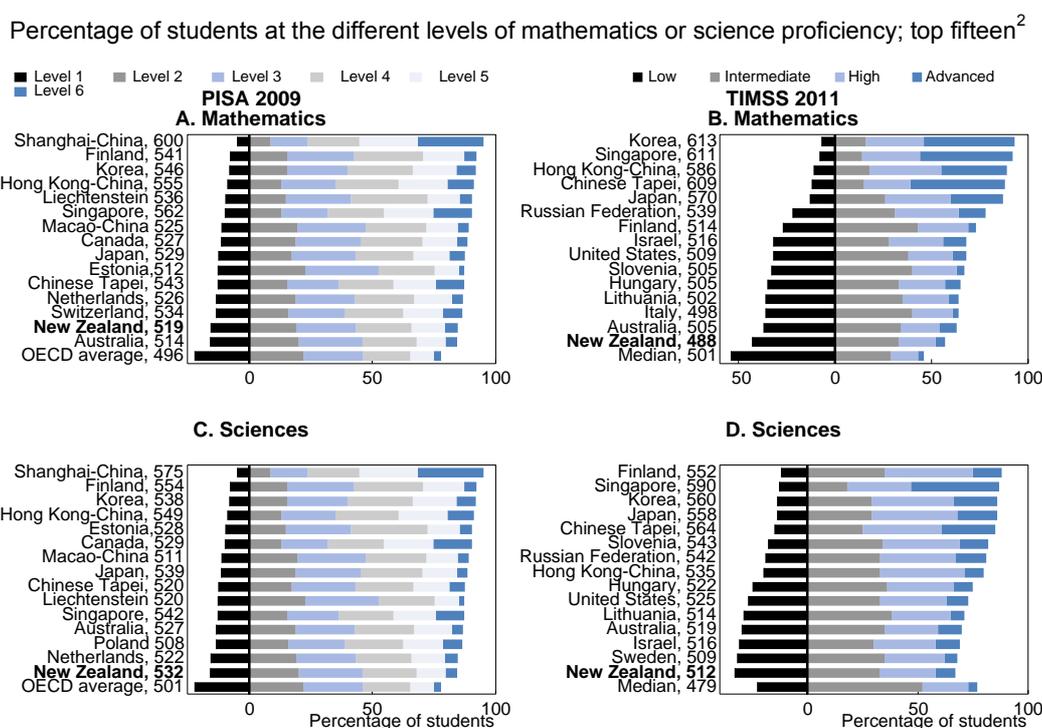
1. The participation of 20-34 year-olds in higher education by parents' educational background is captured by the distribution (proportion) of parents' educational attainment, and the corresponding odds (high, medium or low) of being in higher education by educational background.
2. The socio-economic gradient represents the change in PISA science score due to an improvement of one international standard deviation in the PISA index of student socio-economic background. The socio-economic gradient taking cross-country distributional differences into account is the change in PISA science score due to an improvement of one country-specific, inter-quartile change in the PISA index of student socio-economic background. Note that science literacy was the focus of PISA 2006, upon which these results are based. For details, see Causa and Chapuis (2009).

Source: OECD, *Education at a Glance 2012*, Table A6.1 and OECD (2010), *Economic Policy Reforms 2010: Going for Growth*, Figure 5.3.

The International Education Association has published a set of standardised international test results for reading (PIRLS) for 4th graders, and for mathematics and science (TIMSS) for 4th and 8th graders. PIRLS (IEA, 2012) shows that for 2011, 14% of New Zealand’s students reached the “advanced” international benchmark for reading achievement, the 10th highest out of 45 countries, but the percentage of NZ students reaching the “high” benchmark was only slightly better than the median (there were two more benchmarks, intermediate and low). Mean reading scores were stable since the last assessment in 2007. Scores in mathematics and science were both at the median for “advanced” attainment and below median

for “high”, and both subjects showed reduced scores since the 2007 assessment (Figure 16). PISA tests math and science *literacy*, rather than subject knowledge *per se* as does TIMSS (Loveless, 2013). Together, these international scoreboards suggest that good performance needs to extend to broader groups of students and more attention needs to be paid to numeracy skills across the board.

Figure 16. **New Zealand’s PISA and TIMSS results are characterised by high means but high dispersion too²**



Note: The data near the country name is the mean score in mathematics or science.

- For PISA data (covering test results for a sample of 15-year-olds), countries are ranked in descending order of the percentage of students at levels 2, 3, 4, 5 and 6. Level 1 includes below level 1. For TIMSS data, countries are ranked in descending order of the percentage of students at benchmarks advanced, high and intermediate at the 8th grade (13-year-olds). Low benchmark includes students who have not attained low benchmark (400 score).
- For TIMSS data, England has been suppressed from the top fifteen because it does not entirely satisfy the guidelines for sample participation rates.

Source: International Association for the Evaluation of Educational Achievement (IEA) (2012), TIMSS 2011 *International Results in Mathematics and TIMSS 2011 International Results in Science*; OECD (2010), PISA 2009 results: *What students know and can do – Student Performance in Reading, Mathematics and Science* (Volume I) and *Overcoming Social Background* (Volume II).

Pre-school: laying a strong foundation

A growing body of research recognises the importance of very early educational experiences to children’s future achievement. Early childhood education (ECE) programmes, in particular, help to create a strong foundation for lifelong learning. PISA results appear to corroborate these claims. They suggest that ECE participation is strongly associated with reading performance at age 15, even after accounting for students’ socio-economic backgrounds, but only in countries where policies have sought to improve ECE quality. Disadvantaged students have less access to pre-primary education than others in almost every country, particularly those in which pre-primary education is not widespread (OECD, 2011).

ECE has been a focus of reform in New Zealand, though a high teacher-pupil ratio in ECE also means that it is expensive. The previous government instituted 20 hours per week (6 hours per day maximum) universal free, fully subsidised provision for children aged 3-5. It also established differentiated funding for ECE centres based on the share of qualified teachers, creating an incentive to employ more qualified staff. The policy apparently did not impact positively on enrolments but mainly increased the intensity of participation amongst those already attending. It further led to a surge in the numbers of teachers completing ECE qualifications and a large cohort of relatively young and inexperienced ECE teachers, along with a sharp rise in the teacher-pupil ratio.

The current situation is that the wealthier, educated households have taken most advantage of state-subsidised ECE provision, rather than those that need it most, i.e. low socio-economic and ethnic groups (Table 9). Many of the children attending ECE would probably have enrolled in ECE even without the subsidy. Childcare subsidies are also available under the Working for Families tax credit, and, though they are means-tested, the upper income threshold for eligibility is high (NZD 99 000 per year). The government has set a high-level objective that by 2016, 98% of children starting school will have participated in quality ECE. Achieving this target will require increased participation by those who are currently under-represented, particularly Maori and Pasifika children. The government has accordingly established participation initiatives in communities with low ECE take-up, including Maori, such as introducing families to ECE via informal playgroups, contracting with NGOs to engage with priority families, and setting up intensive community participation projects and home-based care initiatives.

Table 9. **Prior participation in early childhood education (ECE) of children starting school by ethnic group**

Year ending March 2013		
	Percentage of children who attended ECE	Total children starting school
Sole European/Pakeha	98.5	32 829
Sole Maori	90.6	10 432
Sole Pasifika	85.9	5 208
Sole Asian	96.9	5 046
Mixed ethnicity ¹	94.9	8 574
Ethnic total	95.5	62 444

1. Weighted average of European/ Maori, European/Pasifika, European/Asian, Maori/Asian, Pasifika/Asian.

Source: Ministry of Education, Education COUNTS.

The NZ “investment approach” to social spending underlines the importance of early intervention. It also suggests that, in a context of constrained budgets, ECE subsidies should be targeted on groups where the future social and labour-market payoff is highest. Some refocusing of childcare benefits on poorer children might thus be warranted. As the imbalance in participation partly represents the lack of physical capacity in poorer areas, it will be important to build up such capacity, for example by locating ECE centres in primary schools. Parental engagement is also critical on the demand side. Some home-instruction programmes have been shown to improve parental demand for ECE and give children of minority backgrounds important advantages in the transition to school (BarHava et al., 1999; Fergusson et al., 2005). Some studies suggest that the advantages of ECE can dissipate if not reinforced by high quality schooling (Heckman and Masterov, 2007). Hence, a balanced and sustained approach to investing in quality and engaging schoolchildren throughout the years of schooling is required.

Schooling: maintaining engagement

The NZ schooling system has been considered to be at the OECD vanguard. Its teaching philosophy is at once respectful of learners' diversity and comprehensive, to give all children the same chances without separating them into rigid vocational and academic tracks. The 1989 school reform decentralised a significant amount of decision-making (appointment and management of staff, allocation of resources, curriculum implementation, pedagogy, assessment, enrolment, etc.) to the individual school level. Parents were given a strong say in school governance by being eligible to serve on school boards. The use of tests to monitor quality is downplayed in favour of a system of internal assessments of pupils by teachers, teachers by school leaders and principals by Boards of Trustees. Accountability is upheld through a sophisticated and internationally recognised system of external school reviews. The Education Review Office (ERO) evaluates schools at a frequency inversely proportional to past school performance.

Thus, schools have been given freedom to teach and made accountable to parents through local boards of trustees, whose local knowledge presumably make them the best judges of teacher quality (Adams, 2009). Indeed, the introduction of a high degree of school autonomy that fundamentally overhauled the NZ school system more than two decades ago followed recognition that the heavily centralised and inefficient system at the time had failed ethnic minorities and other marginal groups (the 1988 Picot report). The current system has the added benefits of flexibility and freedom from "teaching to the test" and frequent feedback from teachers and students' evaluation of their own learning, which international evidence has found to be important for cognitive development. Overall performance has improved, including among minorities.

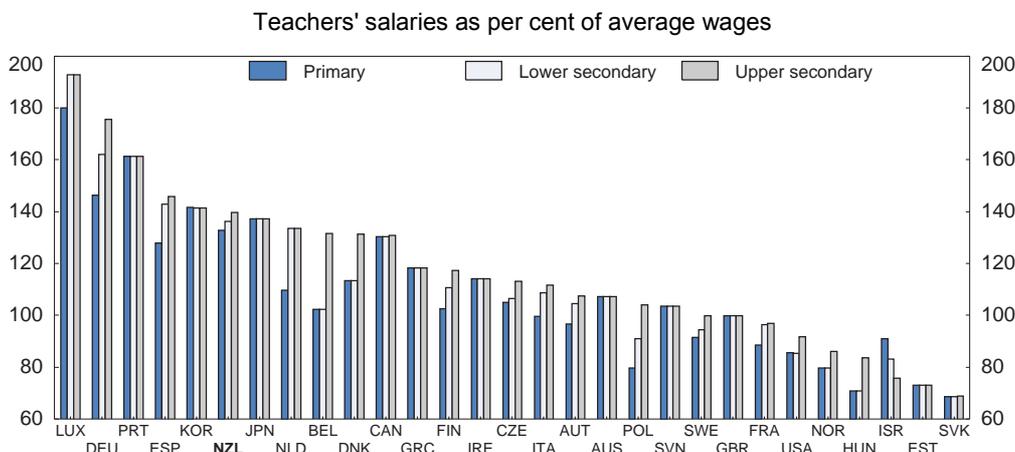
However, teacher wage setting has remained centralised. Intuitively, this would seem to break a critical link between accountability and autonomy, restricting school leaders' freedom to pay more to attract and keep good teachers, or more broadly to allocate school resources among competing uses in line with student needs. OECD empirical work has found that student attainment is higher when schools have autonomy over teacher salaries and pay progression (Sutherland et al., 2009). PISA work further suggests that many well performing education systems have moved from bureaucratic "command and control" towards school systems where considerable discretion is given to school heads and faculties in how resources are allocated, a factor which is shown to be closely related to school performance when combined with effective accountability systems; school autonomy in defining and elaborating curricula and assessments also relates positively to system performance (OECD, 2010a, pp. 4 and 41).

Parental choice needed to strengthen school oversight is available – parents may send their children to out-of-zone schools, space permitting, and more school-performance information is being made public to inform this choice (Annex 1). However, capital expenditures remain entirely under the control of the Ministry of Education (purportedly to take into account wider school network implications of some schools expanding at the expense of others), undercutting the ability of high-performance schools to expand and weakening the pressure on failing schools to improve. The government could increase benefits by giving each school a block grant, covering both staffing needs and the cost of buildings and land, based on student enrolments, along with mechanisms for recognising geographic, socio-economic and size differences (Adams, 2009; Fazekas, 2012). Choice and competitive efficiency are also limited by the still small share of alternatives to the state school system. Indeed, a larger share of private government-dependent schools has been shown to enhance system performance in OECD countries (Sutherland et al., 2009). The government is planning to introduce a few charter schools in mid-2013 on a trial basis. They will be free of the national curriculum and collective pay agreements but will have an obligation to serve underprivileged children. This proposal has met heavy resistance from the teachers' unions, mirroring the debates elsewhere in the OECD. It will be important to evaluate the results of the pilot and carefully assess the value of charter schools.

The devolved system, despite its benefits, has resulted in excessive fragmentation and sometimes poor capacity in school governance. This problem seems particularly acute at the primary level: there are too many small-scale schools in often depopulating rural areas, with too much duplication in administration and policy implementation, and isolated teachers with few external supports; school management talent is spread too thinly, and the administrative burden on individual principals often prevent adequate focus on learning goals. Educational outcomes also suffer in small-scale schools (Sutherland et al., 2009). In New Zealand, however, low-decile schools tend to be smaller, making it difficult to determine whether it is school size or some other factors (e.g. socio-economic status) that affect student achievement.

Teaching quality has also been called into question by the long “tail” of underperformers. Relative teacher pay is among the highest in the OECD (Figure 17), which (among other factors such as status and initial teacher training) should be attracting high-quality people into the profession. However incentives to professional development may be weak. There is a national system for teacher registration against national standards, enforced by a professional body (the NZ Teachers’ Council), yet teachers’ unions are also represented on the NZTC. Teacher pay progression is based on seniority, rather than performance. Movements up the salary scale occur annually based on the school principal’s attestation of satisfactory performance, so that teachers reach their maximum pay grade relatively early in their careers, with subsequent pay increases achieved only through negotiated changes to the collective agreement, promotion, or taking on additional roles and responsibilities that attract additional allowances. Assessment practices also suggest scope for doing better. Internal school assessments of teacher and student progress are performed well in a mechanical sense but are not always used by teachers to adapt pedagogy and curricula to meet the needs of poor performers. Failing students and their parents often do not know they are underperforming until it is too late to correct problems.

Figure 17. Teachers' salaries as per cent of average wages, 2010



Source: Statistics New Zealand; OECD Database; OECD (2012), *Education at a Glance*.

The government has introduced national standards in primary education (grades 1-8). In a context of decentralisation, school autonomy and diverse learners, its aim is to help schools and parents to better understand children’s learning needs by providing information about their progress and achievement against clear learning goals, and to identify and support students who are not on track for success. Schools and teachers can then make more informed decisions about curriculum, pedagogy, resource allocation, etc. At the system level, student achievement data are used to inform decision-making in relation to goals and targets, policy development and allocation of resources across the system (OECD, 2013b). The system is being implemented despite initial resistance to the sharing of school data. However, it is still based on within-school assessments of whether the standards are being achieved. The authorities are addressing this

issue by introducing a tool to assist teachers to moderate and ensure consistency of their judgements about whether students have achieved the standards. Furthermore, ERO has updated its assessment process to engage more collaboratively with teachers, rather than at arms' length as formerly, thus helping to ensure teachers' "buy into" ERO recommendations. This promising development follows recommendations by the OECD Review to strengthen the quality and impact of assessments (Nusche et al., 2012).

The government has made improving the quality of teaching one of its top priorities in education policy, though it has backed down from a proposal to fund this by increasing class size, following opposition from teachers and parents – even though class size is only weakly related to outcomes, in particular in secondary education. The chief remaining means of boosting teacher quality would be to: *i*) further raise the rigour of teacher training and offer attractive terms of employment including greater pay differentiation, e.g. for serving in deprived student areas; *ii*) strengthen the teacher appraisal and the performance-management process, backed by boosting school leaders' capacity to carry out the process; *iii*) establish a career structure to create perspectives for people to grow, and link teacher appraisals to career progression (Nusche et al., 2012); and *iv*) provide adequate exposure to professional collaborations and development. Rationalising school administration and policy by amalgamating schools with excess capacity (especially at the primary level), and providing incentives and opportunities for schools to cluster and establish closer formal and informal arrangements, would increase opportunities for networking and cross-fertilisation of ideas among educators, contributing to improved educational outcomes. It could also make schools more accountable by increasing competition for a more limited number of school board and school leader positions.

Preparing the transition in secondary

At the upper secondary level (grades 11-13), the introduction of National Certificates of Educational Achievement (NCEAs) about a decade ago, with formal quality assurance by the NZ Qualifications Authority, has helped to counterbalance the potential weaknesses of subjective teacher evaluations as performance indicators. The various NCEA levels achieved by students therefore result in highly credible and standardised certifications. In addition, secondary schools are typically much larger than primary schools, allowing for economies of scale in management and more experimentation with teaching and curricula.

Nonetheless, PISA reveals that New Zealand leads the OECD in grouping pupils by ability (mainly at secondary level), which OECD research has found diminishes educational efficiency (Sutherland et al., 2009). The high incidence of ability grouping in NZ secondary schools may be explained, in part, by the comprehensive nature of the system and by the fact that New Zealand has a low incidence of grade repetition. These factors result in a wide heterogeneity of ability in each year level in NZ schools, which they attempt to manage via ability grouping, both across and within classrooms. A recent study finds that sorting homogeneously by previous performance in fact improves students' math and reading scores, for both low and high achieving students (Collins and Gan, 2013).

The introduction of NCEAs recognises a wider range of learner skills and competencies, and enables students to work towards qualifications at their own pace, thereby supporting less academically inclined learners. An emphasis on foundation-level literacy and numeracy skills seems entirely appropriate for a school-level qualification. However, with three levels of formal school qualification (Annex 1), the assessment burden on some students may have become excessive (Hipkins, 2007). This compounds the alienation of poor performers who have already been let down by primary schooling and who may be more likely to thrive in learning environments of a more practical and work-related nature.

Successive governments and individual secondary schools have tried to address the needs of at-risk students through the introduction of vocational education and training (VET), notably Gateway, which

enables upper-secondary students to undertake structured workplace learning while still in school. Apart from a few successes, such courses have suffered from low prestige. Many students with low motivation and engagement either drop out of school shortly after their 16th birthdays or they may finish secondary schooling at age 18 without even having earned an NCEA level 2, considered to be the minimal requirement for entry-level jobs. This also reflects the fact that students are free to achieve NCEA levels at their own pace through a variety of courses, particularly so for non-academic-track students, and greater clarity and guidance is needed to navigate the plethora of choice that is being made available under the banner of reform.

Another problem has been that the NCEAs, even though they are standardised across the country and thus support job mobility and labour-market efficiency, still may convey insufficient information to tertiary institutions or employers. Surveys of students and parents have previously suggested that there is little incentive to work to pass the (pass/fail) NCEA exams, and that the NCEAs allow students to opt for “easy” units rather than those that are more challenging and to put too much emphasis on internal assessments, causing students to strategically minimise work effort so as to leave room for improvement under the next assessment round (Wylie et al., 2008; Meyer et al., 2006). A number of changes have been implemented in response to these criticisms. First, NCEA qualifications (and the individual courses that contribute to them) now carry three grades (achieved, merit or excellence) to better differentiate performance (Annex 1). Second, the new Vocational Pathways programme brings together the standards and skills recommended by businesses in five broad sectors and links them to study and employment possibilities.

Competent Learners (a longitudinal study tracking a group of children in the Wellington area from ages 5 through 20) found that students at most risk of dropping out gave signs of boredom and restlessness, poor school attendance and risky behaviours by age 14, making 9th and 10th grades a pivotal period for addressing youth issues, though it remains outside the system of national performance standards. This suggests areas needing more attention by educators. International evidence suggests that these include a strong emphasis on early identification and interventions to address specific learning and behavioural issues, coupled with mentoring and individualised support. Work-relevant learning and extracurricular activities such as music, sports and youth associations may also help to engage disaffected youth and build both cognitive and non-cognitive skills. It will be important to recruit minority students into such activities.

Every effort should be made to keep youth in mainstream education and well integrated with successful learners. Consideration should be given to increasing the age of compulsory schooling further (OECD, 2008a; Box 6). The government has started to curtail schools’ incentives to allow or encourage student to drop out (especially right after funding is renewed), notably by tying funding to student rolls at quarterly (rather than annual) intervals and tightening requirements around the granting of early leaving exemptions.

Box 6. Raising the school-leaving age: international experience

New Zealand is among the minority of advanced OECD countries with a minimum school-leaving age of 16. Most countries in Europe, most recently the United Kingdom, and a number of US states and Canadian provinces have raised their compulsory schooling age to 18; Australia has recently raised its to 17. The wisdom of such a move receives considerable support from research. Oreopoulos (2007), for example, finds that 20th century increases in the school leaving age (from 14 to 15 to 16) in the United States, the United Kingdom and Canada raised lifetime wealth by at least 15% for each extra year of compulsory schooling, even accounting for foregone income due to delayed work entry. Non-pecuniary gains such as higher life expectancy and life satisfaction, and reduced risks of unemployment, were large as well. Hence, the opportunity costs of dropping out are substantial. Teenagers may not act rationally in the face of such information, given myopia in adolescent psychology and incentives ruled by peer pressure. NZ research has found that a factor important for successful school leaving for boys (who take longer to reach maturity than girls) was merely staying at school until the end of Year 13 (MoE, 2011). A rule that removes the need for willpower to stay in school thus increases welfare. Opponents of longer compulsory schooling argue that forcing unmotivated youth to stay in school is worse than their dropping out. Teachers tend

to be opposed because they fear burn out from having to continue to deal with difficult and disruptive youth. Therefore, longer compulsory schooling must be accompanied by policies to make school relevant for those who would otherwise have left.

The UK reform may be particularly relevant for New Zealand. There, the obligation is to stay in learning rather than school *per se* until age 18 or the attainment of minimal qualifications, whichever comes first. Youths can fulfil the obligation in a variety of ways, including working full time provided they attend training either with the employer or outside (OECD, 2008b). Competition among providers is encouraged by publishing performance information and allowing students a choice of provider. The obligation is being slowly phased in (coming fully into effect only in 2015), and thus it is not possible to evaluate its success in keeping youth in learning. However, it is likely to be more promising than keeping youth who want to leave school in a classroom. New Zealand's recent reforms providing a variety of pathways for completion of foundation-level qualifications (secondary studies) could serve as a complement to such an obligation, were it to be implemented.

The transition to tertiary education

Secondary-tertiary interface

The government is investing heavily to create multiple pathways for young people to attain foundation-level qualifications (Joyce and Parata, 2012). It is recognised that the approach of exclusively comprehensive, implicitly academic-track education in upper-secondary schooling had ill served students with different interests and needs, resulting in underutilised human capital. The challenge is to engage students to complete studies in upper secondary, VET and beyond and ensure effective transitions to the labour market (OECD, 2013b). The government has accordingly set two high-level educational goals: *i*) to raise the proportion of 18 year-olds with an NCEA level 2 from 72% currently to 85% by 2017; and *ii*) to increase the proportion of 25-34 year-olds with qualifications at level 4 or above on the New Zealand Qualifications Framework (equivalent to a two-year polytechnic diploma or higher) from 52% currently to 55% over the same time span (see OECD, 2013a, Chapter 1 for estimated long-run growth impacts of these measures). The latter goal is more ambitious than it appears, because without action the ratio would decline due to cohort effects. There is also a supporting goal to increase attainment at level 4 and above among Maori and Pacific Islanders (TEC, 2012).

A key tool to achieve these targets is the Youth Guarantee (YG) of fees-free tertiary education for the achievement of NCEA levels 1 to 3 by 16-17 year-olds, especially for those who are at risk or have already dropped out of school. Students may achieve these qualifications within either a secondary or tertiary education setting, or a combination. VET typically forms a major part of such programmes and is often provided by Institutes of Technology and Polytechnics (ITPs), which have a strong comparative advantage in VET with a richness of content unavailable at secondary level. The programme is being rolled out progressively. The number of Youth Guarantee places was substantially increased in Budget 2012 and is on track to increase to 10 345 places by 2015 (from 2 500 in 2012), given anecdotal evidence of some unfilled YG places. YG is due to be evaluated towards the end of 2013, and better information will then be available about the cost-effectiveness of the YG programme and its impact on the educational participation and achievement of this age group, and whether supply is meeting demand. The Secondary Tertiary Alignment Resource (STAR) delivers additional funds helping at-risk students to smoothly transition.

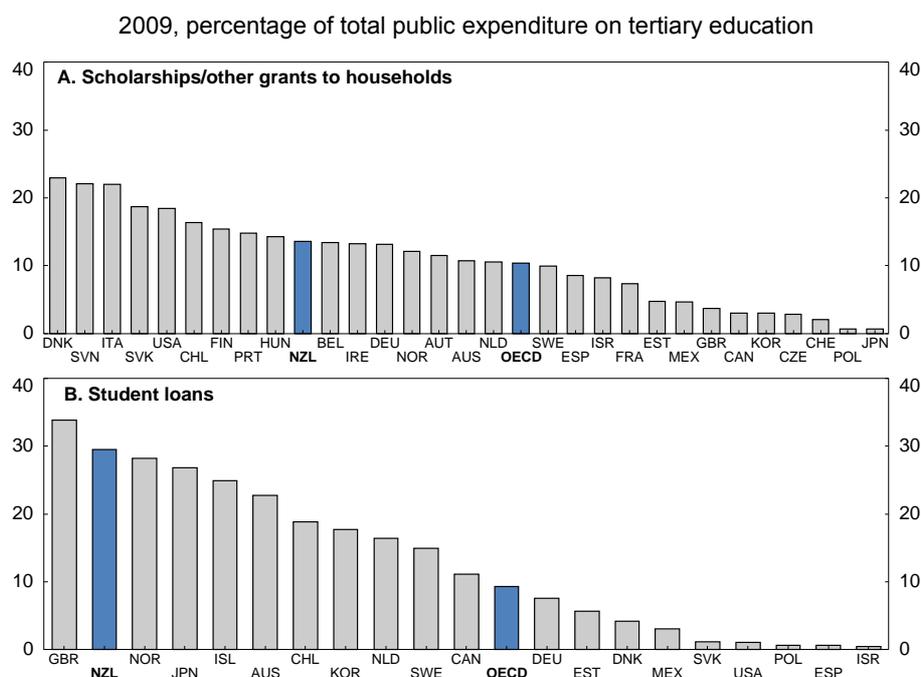
A number of tertiary Trade Academies have been set up under the guarantee as partnerships between tertiary providers and secondary schools to enable 16 and 17 year-olds to undertake trade-related tertiary study while still enrolled in school. While it is preferable for students to earn their NCEA levels 1 and 2 while still in secondary school – as this is the least-cost and hence most sustainable solution – the Trade Academies have yet to be evaluated, though early anecdotal evidence is positive. An obstacle to expansion of the academies may be resistance by high-school principals who fear lower funding from the loss of students to part- or full-time tertiary study, suggesting the need for clearer funding guidelines (ERO, 2011). The Service Academies is a similar initiative with military-style programmes to encourage at-risk upper secondary students to stay in education and training or enter the labour market (OECD, 2013b).

Tertiary performance issues

Quality assurance in NZ tertiary education is strong (Annex 1), yet the earlier enrolments basis for public funding may have dragged down quality insofar as tertiary educational organisations were mainly motivated to keep student head count high in pursuit of subsidies. Many courses were driven by demand from students, which in some cases did not reflect the skill requirements of employers – although the increase in earnings and employment rates with qualification levels suggests that most skills produced are indeed of value to employers. Some students were needlessly kept in drawn out training, particularly by some of the Private Training Establishments (PTEs) for foundation training programmes for beneficiaries and some industry training. The Tertiary Education Commission (TEC) now makes a small (5%) portion of funding contingent on completion rates, and is planning to expand this share. The TEC now publishes completion rate data by institution, while the Government has increased the publication of job placement and post-study earnings rates. These steps have led to improved performance by providers.

Cost sharing with students is considered to be justified by the greater ratio of private to public returns in tertiary as opposed to lower levels of education (although student groups feel tertiary education ought to be a right, not a privilege). Student loans for tertiary education are very generous and income-contingent, along with grants enabling wide access (Figure 18). Their interest-free component nearly doubles their long-run cost to government, while lowering the cost to students (Ulrich et al., 2012). While the government has attempted to recoup some of these costs by requiring debtors working abroad to pay interest, this may create perverse incentives, and non-payment is already a serious problem. The size of loans has increased as tertiary institutions raised their (regulated) tuition fees, so that affordability has been stable (Ulrich et al., 2012), though access may be an issue for debt-averse students from poor families. The equity burden of taxpayer-funded assistance going to mainly middle-class students may also be problematic. However, financial barriers may be minor hurdles to tertiary access by the disadvantaged. Canadian research has found that parental aspirations and early childhood influences may be much more important, although they are correlated with socio-economic status (Finnie et al., 2010).

Figure 18. **Public subsidies to private entities for tertiary education**



Source: OECD (2012), *Education at a Glance*, Chart B5.3.

Box 7. Recommendations for improving education policy

- Ensure greater ECE participation by children from disadvantaged backgrounds by a more targeted approach, such as home instruction programmes to boost parental demand, and by refocusing child-care subsidies on low-income groups to encourage suppliers to enter into areas of low provision.
- Foster teaching quality by improving content of teacher training and promoting professional development, especially regarding diverse student needs; bolstering capacity of school leaders via training and selective hiring; and tying salaries and career paths to good performance rather than merely seniority.
- Improve standards, appraisal and accountability in the schooling system by:
 - providing incentives and opportunities to amalgamate and cluster fragmented school networks, to achieve economies of scale in administration, thus freeing up principals to focus on learning goals, and exposing teachers and pupils to beneficial network effects;
 - continuing to strengthen external checks on school self-review and internal assessment processes (peer-to-peer moderation, Education Review Office review, publication of school information and national benchmarking), thereby reinforcing their twin foundations of responsibility and trust;
 - providing block grants for a greater share of school costs, including staffing needs and operating costs, based on student enrolments and socio-economic challenges, to give schools flexibility to allocate resources and respond to parental demands for high-quality teaching;
 - carefully promoting quality-inducing school competition and innovation, keeping in check any tendency toward school segregation by a strong social-service obligation in exchange for government support, with objective evaluation of pilot projects in this sphere.
- Review current mechanisms for targeting resources to students of low socioeconomic background; consider ways to attract the best teachers to the most challenging classrooms and to make learning more personal.
- Reduce drop-out rates by: raising learning obligations to age 18; improving relevance of curricula and school activities for failing students; and keeping students in mainstream education and in well-integrated classrooms.

Matching skills to jobs

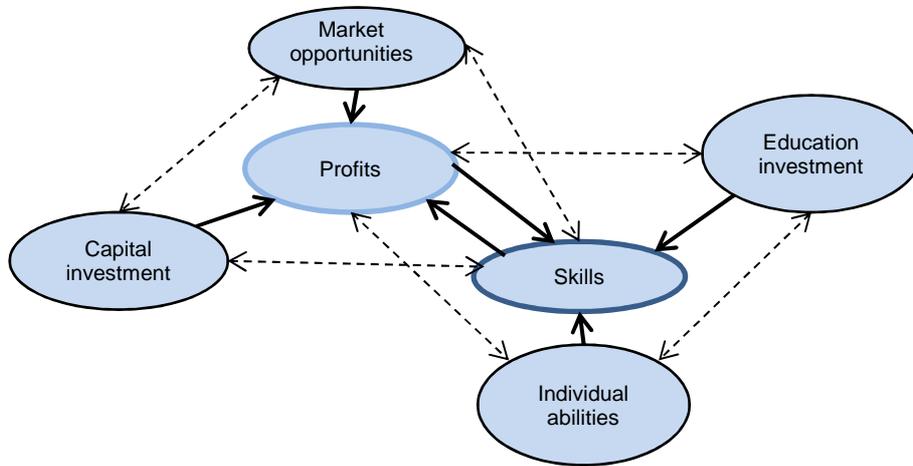
According to the Dalziel (2012) model of the “skills ecosystem”, skill shortages could be seen as a co-ordination failure between business investment decisions and youths’ education decisions (Figure 19). The long lead times in education make such co-ordination difficult. These two decisions are typically intermediated by market signals, notably returns to education, and by co-ordination. To bridge this gap, students must be helped and even trained to choose the fields and levels of qualifications that are not only compatible with their interests and abilities but also likely to be needed in the labour market by the time they graduate.

Unsatisfied demand for skills

Business surveys point to an undersupply of the skills required for firms’ production and innovation needs. Three areas of significant mismatch/undersupply were reported in 2009 by the Ministry of Education: ICT, engineering and construction (Earle, 2009). Since then, demand has continued to grow in construction and engineering (Figure 20, Panel A). Shortages in construction may be exacerbated by the Canterbury rebuilding and, more imminently, by the strength of housing investment, stronger requirements for earthquake-proofing and leaky-home recovery across the country. Employers also complain of deficient “soft” skills (discipline, courteousness, interaction, etc.) afflicting all worker segments. Such non-cognitive

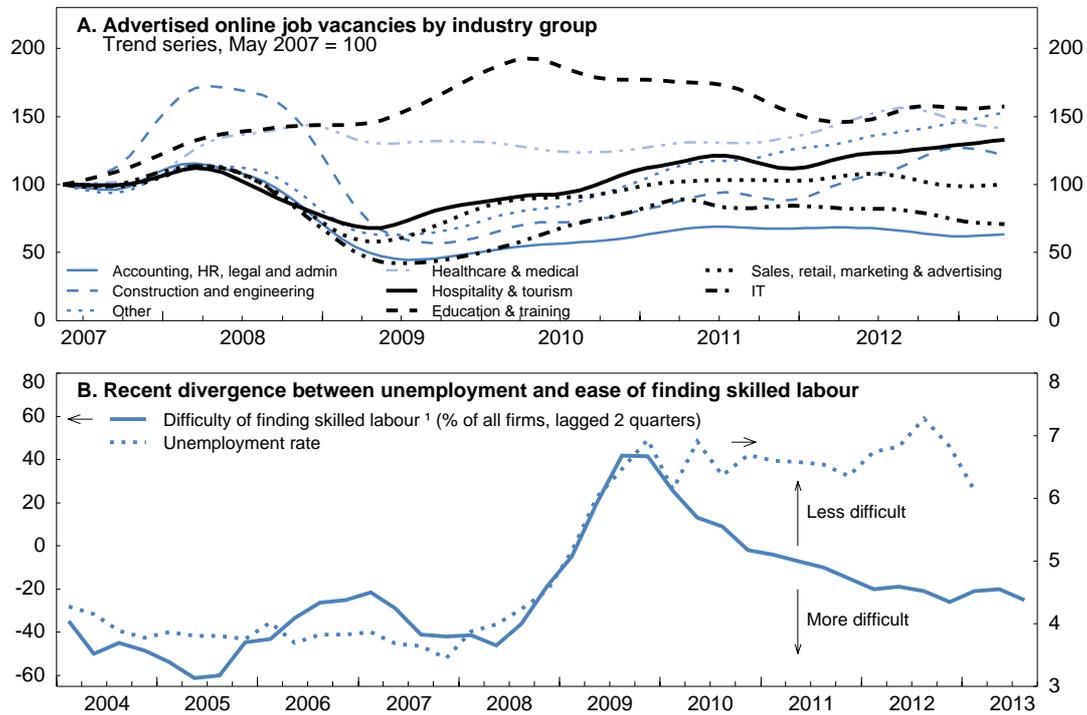
skills now play as important a role in school and work success as their more easily measurable counterparts (Heckman and Krueger, 2004).

Figure 19. The skills ecosystem



Source: Dalziel (2012), *Toward a New Zealand System of Skill Ecosystems*.

Figure 20. Indicators of skill needs



1. Negative figures mean employers finding it difficult exceed those who say it is easy.

Source: Department of Labour; NZIER, Quarterly Survey of Business Opinion and OECD Economic Outlook 93 database.

Historically, labour-market slack has acted to ease skills shortages as employers find it much simpler to recruit needed skills from the pool of unemployed, or from people changing jobs. However, since 2009, NZ businesses have had increasing difficulties in finding skilled workers even though higher unemployment has persisted (Figure 20, Panel B). Such a shift in the relationship between unemployment and the number of vacancies has also occurred in a number of other OECD countries (Hobijn and Sahin, 2012). This would seem to indicate that the skills of the unemployed, or of employed workers changing jobs, provide a poor match for the skills that employers need.

As NZ qualifications are generally high and a reasonable proxy for skills (Box 8), the real issue may be that matching efficiency in the market has declined. Since the crisis, workers have not been changing jobs as readily (Fabling and Maré, 2012). The Canterbury earthquakes rapidly changed skills supply and demand patterns in that region, while net worker inflows to the country became smaller and on average less experienced (Craigie et al., 2012). Less efficient matching is also not unexpected following major recessions, when employers tend to shift their demand for skills in search of productivity gains (Jaimovich and Siu, 2012).

Box 8. Are qualifications a good proxy for skills?

Research based on the 2006 OECD Adult Literacy and Life Skills Survey (ALL) (Statistics Canada and OECD, 2011) appears to support the validity of formal qualifications as a reasonable proxy for skills in New Zealand, apart from those of immigrants, who make up a significant proportion of the NZ workforce (Smyth and Lane, 2009). There are comparatively few people with low qualifications but high literacy and numeracy skills, whereas 20-25% of degree-holders show low literacy and numeracy skills, particularly among those for whom English is not their native language. This suggests that the measured lower skills level could reflect a language barrier, rather than weak intrinsic skills, though the quality of degrees earned abroad may differ from those at home, as some employers have attested (Baron and McLaren, 2006).

NZ immigrants are more likely than the native born to have degrees: in 2006, 26% of the working-age population was foreign-born, and 38% of recent migrants had a university degree compared with only 17% of the New Zealand-born (Maré and Stillman, 2009), yet the presence of immigrants in a region appears to have the effect of lowering wages in low-skill occupations, not in those requiring a degree (Maani, 2009). This indicates that degree-holding immigrants tend to start out in lower-skilled occupations, or in occupations for which they are over-qualified compared with New Zealanders in the same roles, at least in their first 5 to 10 years (Hodgson and Poot, 2010). This result may reflect the preference given to highly qualified immigrants in recent years and the inability of the economy to absorb them efficiently, or of a market failure to convey the correct information about their true skill levels to employers. Other research has found that the emigration of degree-qualified New Zealanders is almost exactly balanced by immigration of degree-qualified people (Dumont and Lemaitre, 2005). However, balance in the exchange of qualifications does not imply balance in the exchange of skills – New Zealand thus appears to suffer from a modest net “brain drain”.

Because qualifications are only a proxy for skills, some mismatch between jobs and qualifications of workers will occur in even a well-functioning labour market (Zuccollo et al., 2013). The ALL survey showed New Zealand to have fairly similar rates of literacy skills deficits and surpluses in relation to job requirements, implying reasonably good matching overall. But in an OECD study of labour market matching of worker *formal* qualifications to their job requirements, New Zealand demonstrates significantly higher rates of underqualification than of overqualification, mainly driven by people with upper secondary qualifications (61% of whom are classified as underqualified), suggesting limited reserves of higher skills (Quintini, 2012). It is possible that New Zealanders possess a higher level of human capital than is average for individuals in the OECD with the same qualifications, partly due to low completion rates in tertiary VET (Zuccollo et al., 2013). However, the ALL study finds that around 40% of NZ employees have literacy and numeracy skills below a level needed to master the increasingly difficult texts and tasks that characterise a knowledge economy (Earle, 2011).

Businesses unable to find the skills they need on the market can choose to train existing or new employees, though they are less likely to do so when macroeconomic conditions are poor. They have been lobbying government to fund more formal training places, academic engineering and IT degree programmes and the like, and to open the gates wider to skilled immigration. Industries in structural decline also complain because they cannot attract workers into low-wage positions with few obvious career prospects (OECD, 2010b).

Strategic planning and co-ordination

The 2008-12 NZ Skills Strategy was a tripartite agreement between industry, labour and government to boost skills and productivity. Rasmussen et al. (2012) argue that weakening of unions by the 1991 ECA and consequent lack of an equal negotiating partner for business has undermined such collaborative efforts. Even if that is unclear, wider collaboration by business, employees and government in worker training and skills development is desirable. The current skills strategy (NZ Government, 2012) adopts many of the same targets as its predecessor, but as part of the Business Growth Agenda, it is a collaborative government-wide effort. It actively engages education policy makers in the wider policy of development and should be seized upon as a chance to build bridges between education and business.

The Department of Labour (now part of the Ministry of Business, Innovation and Employment, or MBIE) produces 10-year projections of New Zealand's skills needs, based on estimated trends in industry-level demands, and inflows into and outflows from skill categories including retirements, migration and graduation. This is meant as a rough guide to educators, students, employers and policymakers about emerging and most probable areas of need, although the range of uncertainty around such estimates is high. The latest projections indicate that demand will be strongest for "skilled vocational and intermediate vocational", which are projected to grow at 5% per year over the decade 2009-19 (Table 10). By contrast, the demand for bachelors' degrees is set to grow at 2% per annum. This reflects: *i*) on the supply side, adverse cohort effects on VET attainment plus a net migration outflow of VET skills, against a strong migration inflow of university degrees; and *ii*) on the demand side, increasing displacement of unskilled jobs by mechanisation or outsourcing and greater emphasis on knowledge-based and higher value added production, increasing the premium on higher-level skills.

Table 10. Occupational demand projections grouped by qualifications, 2010-20

Annual percentage growth

2010-20 (Annual % changes)	No qualifications	School qualifications	Basic vocational	Skilled vocational	Intermediate vocational	Degrees and advanced vocational	Total
Managers	-5.9	-2.0	3.1	7.2	8.1	2.9	2.3
Professionals	-1.8	-5.0	-0.2	6.3	7.7	1.1	1.5
Technicians and associate professionals	-1.8	-4.3	-2.0	5.9	6.3	2.7	1.7
Clerks	-2.4	-2.8	0.9	7.2	4.5	3.1	0.4
Service and sales workers	-0.3	-1.1	0.9	5.2	4.5	4.1	1.4
Agriculture and fisheries workers	-2.1	-2.7	1.4	5.0	5.2	2.8	0.4
Trades workers	-3.0	-5.2	-0.9	4.3	-11.0	3.5	1.1
Plant and machine operators	0.2	-1.7	3.9	7.4	3.4	2.8	1.7
Elementary occupations	-0.8	-0.5	3.5	7.0	3.9	4.1	1.2
Total	-1.5	-2.5	1.3	5.1	5.0	2.1	1.4

Source: Department of Labour (2012).

NZ Treasury projections suggest less excess demand for VET skills, based mainly on an assumed lower net outflow of such skills (Department of Labour, 2012). However, there is a risk that skills needs across the board could be even greater. One key risk for New Zealand is that global competition for degree-level qualifications, combined with population ageing in many countries outside the OECD, could choke off some of the anticipated gross inflow of highly skilled immigrants and accelerate the outflow of highly skilled residents, raising the need in particular for university degrees.

The Industry Training Organisations (ITOs) were set up partly with the intention of filling the role of “skills leaders”, but they have largely failed to do so, citing a lack of funding for this purpose. The government’s recently completed industry training review has called for the skills leadership role to be assigned to industrial sectors that may agree for their ITO to assume this role (see further below). This should improve incentives for industry and government to work together in providing market-relevant skills planning and education funding.

Responding to market signals

The returns to education depend on its costs in terms of fees and foregone earnings during study, against expected future extra post-tax earnings associated with having a formal qualification. According to OECD calculations, the market returns to tertiary-degree holders relative to those with an upper-secondary diploma are apparently the lowest in the OECD, while those to upper secondary (and post-secondary) education relative to no qualifications are among the lowest (Figure 21). Although perhaps half of the tertiary return gap vis-à-vis the OECD average may be explained by measurement error and composition effects (Box 9), there remains a “real” gap suggesting a need for greater attention to the value for money provided by the student-loan scheme and public funding incentives more generally.

Low measured average returns to tertiary education for New Zealand could reflect the country’s low productivity, given that workers in competitive markets earn their marginal product (Box 9). Some causal factors common to both low productivity and low returns are: relative lack of large firms (more likely to pay “efficiency wages” and further train highly qualified workers), natural resource endowments (leading to low innovation intensity, hence lower demand for skills), and financial underdevelopment (contributing to low capital intensity and small firm size). But since skills are the building blocks of innovation, inadequate human capital investments may in some sense *precede* low productivity.

Box 9. Market returns to tertiary education

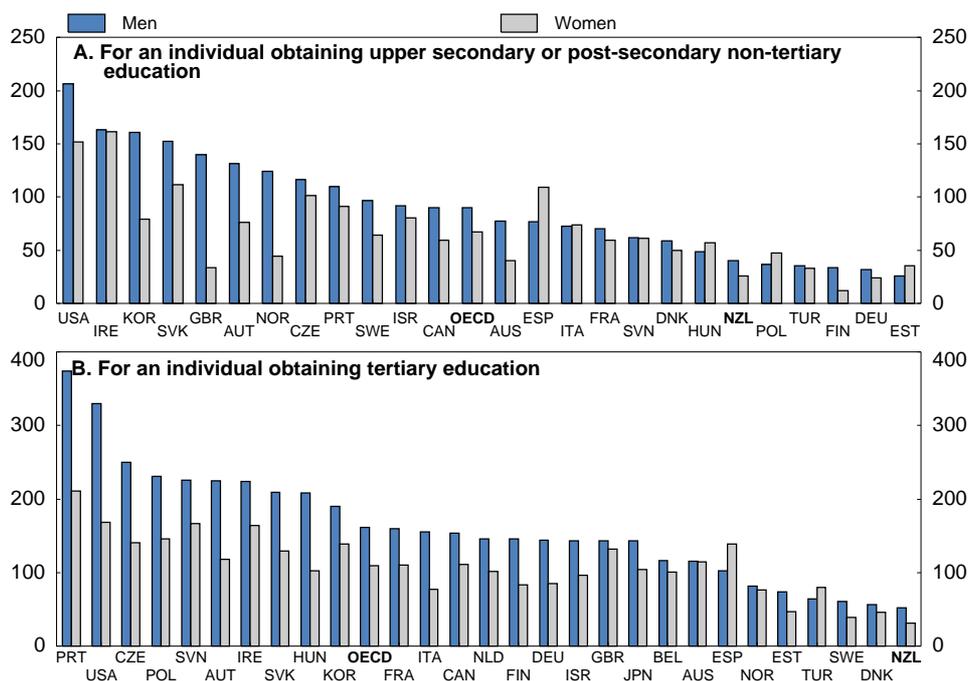
New Zealand stands out by its very low measured private (market) returns to tertiary education in international comparison. Average earnings of tertiary graduates, relative to those with only upper-secondary education, are near the bottom among OECD countries for university (Type A) and, especially, college (Type B) qualifications (OECD, 2012c, Table A8.1). Though average returns to university are even lower in high-income Sweden, Denmark and Norway, the Nordics are known for their compressed wage structures in general. New Zealand’s minimum wage relative to its average wage is highest in the OECD at just under 60%, also resulting in a compressed wage structure.

A more sophisticated comparison based on the OECD’s calculated net present value, taking into account the direct and opportunity costs of study and earnings net of unemployment risk, taxes and transfers, puts New Zealand at the very bottom of the tertiary return rankings (Figure 21). However, Zucchetto et al. (2013) estimate that up to half of the gap in tertiary returns with respect to the OECD average can be attributed to compositional and measurement differences, notably: *i*) a much larger share of tertiary Type B (vocational) relative to Type A (university) degrees, dragging down average tertiary return, plus exaggerated secondary returns (the baseline for tertiary returns) due to the large stock of tertiary VET non-completers; *ii*) a large qualified immigrant inflow with a large gap between their qualifications and skills due to various barriers (see Box 8), potentially also depressing wages of native holders of lower tertiary qualifications, against a large exit of young high-skilled New Zealanders, notably to Australia, where they can earn significantly more than their NZ wage for the same skill (notably in the construction sector); and *iii*) the use of 2007 (base year) tax rates, prior to the large 2010 cut in the top marginal rate. But while returns may be low, they are

far from zero and still provide an incentive to pursue higher education. There is also evidence that the NZ labour market pays a high premium to young NZ holders of NZ degrees; see Scott (2009) and Mahoney et al. (2013).

It is sometimes asserted that NZ businesses are unwilling to pay a sufficient premium for the skills they seek. However, firms reporting the greatest skill vacancies are those who pay the most, suggesting that willingness to pay is not the problem (Mok et al., 2012). In any market there will always be unsatisfied demand by those who could not pay the equilibrating price. This is likely to include firms whose productivity is too low to pay for the skills they require, a fundamental problem that may reflect a dearth of market opportunities promising future profits and/or a lack of managerial ability to make the best use of available skills to exploit them. Financial-market failures may also play a role, for example in the form of excessively collateral-based lending or lack of venture capital. Hence, an inability rather than unwillingness to pay is likely to be the more serious problem.

Figure 21. Market returns to education are comparatively low¹



1. Or latest available year.

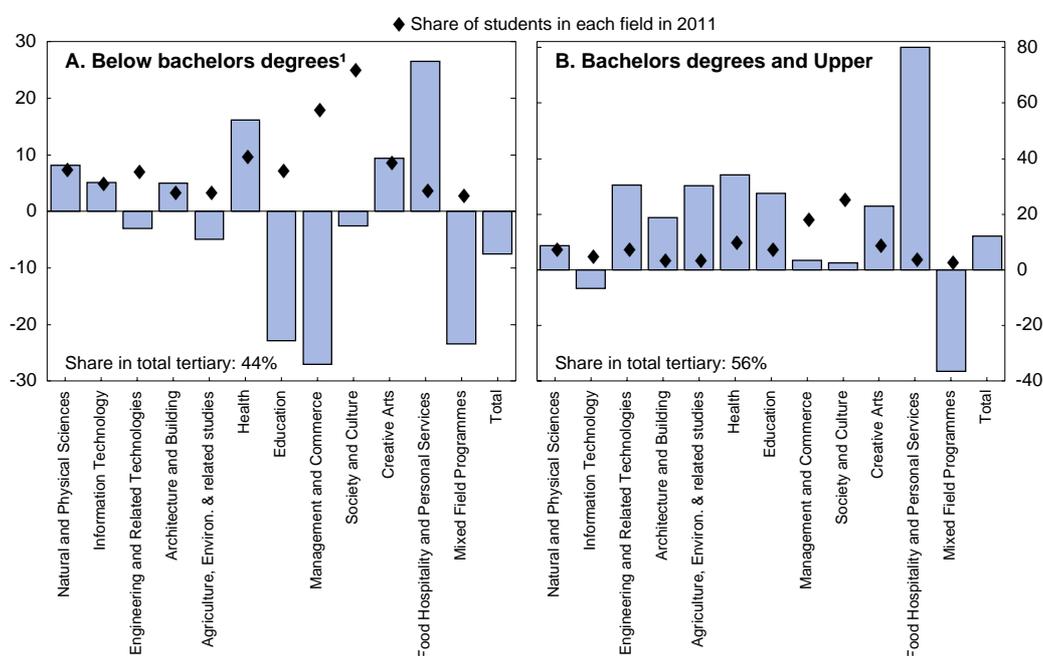
Source: OECD (2012), *Educations at a Glance 2012*, Tables A9.1 and A9.3.

Since New Zealand has high education spending for its level of GDP (Annex 1) and high tertiary attainment rates, the quality and relevance of its tertiary education must be scrutinised. Low market returns could be an indicator of over-education for the actual needs of the labour market, accelerating already diminishing returns as more marginal students are subsidised into entering tertiary education, alongside inadequate skill supplies for the needs of some sectors of the economy. Along with their open-ended nature (covering living costs as well as tuition) and ensuring their repayment is income-contingent (which the OECD always recommends), student loans could undermine the incentive for students to make the most of their tertiary studies. Alternatively, there could be resource misallocation within education due to wrong fields of study or poor quality of instruction. Equity issues also emerge. To raise national welfare, some resources should be redirected at reducing high-school dropping out. This is indeed a significant area of investment in New Zealand, though such resources could perhaps be better focused in line with the above recommendations (Box 7). Merit-based scholarships could be provided to Maori and Pasifika in areas deemed to be undersupplied relative to economic needs.

Figure 22 shows the most popular fields of study, at both ITP (Institutes of Technology and Polytechnics)/PTE and university levels, to be society and culture and commerce, where however abandonment rates are also very high (around 40%). This suggests some mismatch with labour-market needs, along with likely quality problems among private tertiary providers in these fields (OECD, 2008a). In the six years up to 2011, growing interest in health and food & hospitality studies appeared to provide a better match to observed areas of growth in job vacancies (Figure 20). Growth of interest in natural sciences and engineering, building trades and IT, the areas of critical business need noted above, remains small, or even negative, apart perhaps from university level engineering. This seems inconsistent with high PISA scores for math and science (admittedly more so when using the TIMSS results), and reasonable market signals in these fields (Mahoney et al., 2013).

Figure 22. Growth of equivalent full-time students enrolled by field of study

2005 to 2011



1. Excluding tertiary programmes providing qualifications below NZQF level 4+.

Source: Education COUNTS database.

The government is increasing funding for engineering places at universities, but the danger is that they will lower their entry standards for these difficult subjects (Hill, 2012). A problem is that the most popular subjects are also less costly for the providers, who receive block grants. Thus, although the government provides differentiated funding for different types and levels of programmes (e.g. arts programmes are given lower levels of funding than sciences), tertiary providers still cross-subsidise across the programmes they offer. A key mechanism for steering the education system is the investment plans that are negotiated between the TEC and individual providers, which include *inter alia* the type of programmes to be undertaken by a TEO (tertiary education organisation) and the number of places to be funded by government. It is also vital to lay the groundwork for student aptitude and interests, in particular for sciences and math, in secondary school.

VET and workplace learning

VET and workplace learning, by their applied nature, have a central role to play in strengthening linkages between education and work. They could also help to motivate disengaged secondary students, preventing high drop-out rates. This may explain many OECD countries' newfound interest in this traditional learning pathway. New Zealand has introduced its own Gateway, STAR and Youth Guarantee programmes. Sufficient resources, both public and private, will need to be invested to make vocational learning more prestigious and effective. But VET is expensive, requiring training by industry specialists and access to fast changing high-tech equipment. Hence, it will be important to ensure that these programmes provide good value for money.

VET

There are some risks associated with an expansion of VET. In market-based VET systems like New Zealand's where there are few institutional mechanisms for transition (e.g. work placements), students may flounder about in several low-skill jobs before they find one consistent with their VET experience. This period of search may be dangerous for VET students insofar as their skills may become obsolete or else they do not make the transition into related employment (Grubb, 2006). Also, it may be in the interest of VET providers and employers together to exaggerate skills shortages (OECD, 2010b; Grubb, 2006), in which case increasing the size of the VET sector may be inappropriate. Government and academic researchers – as honest brokers – need to carefully evaluate the real extent of skills shortages, as the Department of Labour (within MBIE) and Treasury are attempting to do. These studies suggest that the vocational skills shortage is indeed real, though its magnitude may be debated.

Expanding VET as a means of re-engaging potential school drop-outs is important, but it should not obscure the need to improve all types of education to make them relevant, interesting and contextual, by means of high-quality teaching across the board. Students must also be able to move easily across academic and vocational tracks, in keeping with the ideals of comprehensive education. This would guard against skills lock-in, another risk of VET. It will likewise be important to fully integrate generic skills training into VET itself. Research shows that VET students learn foundation skills best within real-world contexts. The government has introduced measures to incorporate literacy and numeracy into all lower-level tertiary courses, with the expectation that all qualifications contribute to the development of generic skills and capability, while also developing specific skills required in a particular vocational area.

Industry training

New Zealand is very strong in industry training, both informal and formal (earning credits toward qualifications). Data for 2008 show that nearly one-third of NZ employees had received informal employer-funded education or training in the previous 12 months. As in other countries, however, such training tends to have a narrow focus and is not equally accessible: most courses were short (one to five days) and geared to firm-specific rather than generic skills; workers in large firms, those more highly educated and those between 25 and 64 were much more likely to receive training than younger workers, those in small firms and without qualifications (Barnes and Dixon, 2010).

The amount of business-funded skills training is suboptimal insofar as firms cannot fully capture the ensuing returns that may prove useful to other firms or to society. This provides an obvious role for government. It can provide subsidies to steer training in more socially and economically desirable directions – to support the unemployed, unskilled and young workers, generic skills formation, small firms, apprenticeships, etc. Since the establishment of the ITOs, which are charged with arranging and monitoring training, in 1992, and especially after 2000 when government funding was substantially increased, there has been a strong increase in the number of trainees and employers involved in formal industry training,

though it has fallen slightly since the recession. One-quarter of firms now train formally. They have higher retention rates, while income returns to trainees are positive, depending on qualification level achieved, and markedly higher in some sectors (management, agriculture and environment, building and architecture, engineering and related technologies) than in others (society and culture) (Crichton, 2012).

The increased quantity generated by government subsidies may have come partly at the expense of quality, however: performance as measured by completion and attainment rates is poor, and some ITOs have cross-subsidised active trainees with continued funding from a large number of inactive trainees (MoE, 2013a). This may suggest inadequate public funding per head and/or poor accountability mechanisms for the recipients of public funding. In the past, one of the main problems of industry training had also been its capture by older workers. Currently around two-thirds of those involved in industry training are 25 years or older. Most other countries concentrate their government subsidies on young people, whereas New Zealand has open access to all learners. This was moderated in the early 2000s via the introduction of modern apprenticeships, but which was recently reversed (below).

Apprenticeships

Apprenticeships can be a particularly effective form of workplace learning. As typically three- or four-year programmes of closely supervised and regularly evaluated work experience combined with theoretical learning, they require a strong commitment by employers, which could also serve as a signal of employers' need for that particular type of skill (OECD, 2010b). They improve the school-to-work transition by putting potential employees and employers in contact with each other. This is especially true of youth apprenticeships in technical skills that are hard to convey in conventional classroom settings (e.g. welding, glazing, plumbing, electrical and building trades), yet have value in the market. However, hosting an apprenticeship is costly to employers in terms of resources, time and management. A key issue is release of apprentices during work hours to attend courses, which imposes a cost/barrier.

Firms also face the risk of not being able to capture the returns to training that may prove useful to other firms. They will thus tend to under-provide training of all skills that have some generality (Mok et al., 2012). Past surveys of NZ business give evidence of "poaching" of apprentice trainees by rival firms, who merely needed to offer a small wage top-up over that being paid by the current employer, yet were able to reap the benefit of the latter's heavy costs of training (Baron and McLaren, 2006). More recent surveys, on the other hand, suggest that the main barrier to training in the last few years has been the economic downturn, with poaching apparently less of a concern among employers (MoE, 2013b).

The government recently announced industry training reforms that remove the modern apprenticeship and create a single apprenticeship programme for youth and adults under the "New Zealand apprenticeship", which: provides the same level of support, and subsidy, for all apprentices regardless of age; boosts apprenticeship funding, education content and status; sets clear performance criteria for ITOs in terms of completion and qualification attainment rates; and increases competition by allowing employers direct access to apprentices, and, in case of unsatisfactory performance by ITOs, diverting industry training funds directly to employers (Joyce, 2013). Average funding rates for apprenticeships will grow by 20%, with the government/business split going from 70%/30% to 80%/20%, which should encourage more apprenticeships and skills supply in line with the anticipated economic pick-up and Canterbury rebuilding needs. The new output-based conditionality and competitive incentives on the ITOs should simultaneously help to ensure good value for money. They should also implicitly favour younger apprentices, who tend to show better completion rates, without locking out promising older trainees. All together, these measures will work toward achieving the Better Public Service target of 55% of 25-34 year-olds holding a qualification level 4 or above by 2017.

The new strategy to boost employers' supply of quality apprenticeship places and improve completion rates by apprentices is welcome. Since the main problem is direct cost and the poaching externality, the solution is subsidies, either directly to wages or to "hosting costs". Recent changes to the government's employment assistance programmes (discussed above) likewise go in this direction. Nevertheless, more efforts may be needed to contain cost while enhancing quality and accountability. Some employers, for example in the building sector, have suggested funding the employer subsidy via a levy on building consents, helping also to attract small firms into the programme (Baron and McLaren, 2006). Group training schemes to train apprentices before placing them with employers could reduce direct employer costs via scale economies. The electrical sector has piloted an innovative model, whereby ETCO, the large group training scheme operating in this sector, has assumed many of the functions of a host-employer, including sourcing, hiring and initial training of apprentices, who are then placed with host employers. It also handles administration and is highly popular with employers (Baron and McLaren, 2006). Similar schemes operate in the plumbing, engineering and building sectors.

Subsidies should always be balanced by a rigorous quality-assurance system (OECD, 2010b). Contract regulations are needed to protect the mutual interests of students and employers, namely to ensure that apprentices actually learn the skills needed for qualifications, rather than being exploited as subsidised workers, and to protect employers from prematurely losing the apprentice-trainees to competitors. In any case the subsidy should remain modest; business should engage in cost sharing with government as a way of securing their interest and commitment (OECD, 2010b).

Career management

Students are the key actors in their own career management: they must learn not only substantive knowledge and lifelong learning skills, but also develop the ability to manage their careers by making wise and informed choices at critical junctures (Vaughan, 2011). The transition can begin as early as age 14, when early interests take form and students choose sets of courses, and can last for up to eight years for advanced vocational and bachelors' degrees, or even longer if education is interspersed with work or unemployment. With lifestyles and career paths becoming much more fluid than in the past, career choices will have to be made more frequently. The "Knowledge Economy" is predicated on a model of constant flux in knowledge and technology, making "learning to learn" a key survival skill to be taught early on and continually used. In New Zealand, a high proportion of non-university tertiary entrants are over 40, showing it is well advanced on the path of lifelong learning.

This also means that the function of career advisor or guidance counsellor is urgently in need of updating, particularly in secondary school. The post was traditionally assigned to teachers lacking professional training and connections to employers and tertiary providers. The new careers educator needs to be specialised and independent, avoiding any biases toward academic pathways. (S)he must be able to interpret the abundance of career information now available on the Internet, form relationships with employer groups and other careers professionals to gather information about skill needs and workplace learning opportunities. Careers advice is most effective when it is embedded in the curriculum as an integral part of students' secondary schooling, and the careers advisor will thus need to interact closely with teachers and students on an ongoing basis.

Guidelines and benchmarks have been developed by the Ministry of Education and Careers NZ (an independent agency of the Ministry, which also provides careers information directly via the internet), and secondary schools receive a staffing entitlement for careers advisors. These supports may still need to be strengthened to ensure that careers advice is professional, independent and nationally consistent at the tertiary level (Dalziel, 2012). In this respect, a review of careers information, advice, guidance and education (CIAGE) is due to be completed shortly (ERO, 2012). Reports are being published by sector

indicating career options and employment outcomes (MBIE, 2013), helping students with study choices. The new Vocational Pathways programme (above) serves the same goals.

Box 10. Recommendations for better business and education decision co-ordination

- Increase tertiary-sector responsiveness to labour-market needs by formalising and/or encouraging linkages between employers and providers and directing funding to projected areas of skills shortage, including by better targeting of course offerings by providers and selective merit- and needs-based scholarships.
- Continue to make education more job-relevant by: *i*) provision of better information to students about labour market outcomes of study choices via high quality professional careers education at secondary and tertiary levels; and *ii*) increasing transparency and accountability in the system about programme quality and outcomes (completion rates; employment outcomes).
- Continue to improve the quality of apprenticeships to offer straighter paths into jobs, signal business skills needs and provide strong incentives for apprenticeship completions. These should also facilitate participation by disadvantaged youth, provide strong training content that is not too focused on specific skills or sectors and provide contractual and other safeguards for apprentices and employers alike.
- Further strengthen capacities of Industry Training Organisations as intermediaries charged with apprenticeship programme administration and skills leadership, including by means of adequate flexibility in meeting performance targets. Encourage the expansion of pilot group training schemes to help contain funding costs. Study the merits of funding the employer subsidy, in whole or in part, via modest sector levies.

Bibliography

- Adams, M. (2009), “Tomorrow’s Schools Today: New Zealand’s Experiment 20 Years On”, *Working Paper*, No. 09-01, Mercantus Center, George Mason University, 9 January.
- Baird, C. (1996), “The Employment Contracts Act and Unjustifiable Dismissal: The Economics of an Unjust Employment Tax”, New Zealand Business Roundtable and New Zealand Employers Federation, August.
- BarHava-Monteith, G., N. Harré and J. Field (1999), “HIPPIE New Zealand: An Evaluation Overview”, Ministry of Social Development, <http://www.msd.govt.nz/about-msd-and-our-work/publications-resources/journals-and-magazines/social-policy-journal/spj12/hippy-new-zealand-an-evaluation-overview.html>.
- Barnes, M. and S. Dixon (2010), “Employer-Funded Education and Training – Who Receives It?”, Department of Labour, Wellington, May.
- Baron, P. and E. McLaren (2006), “Overcoming Skill Shortages: Employer Perspectives and Strategies”, *Research Report*, No. 4/2006, Labour Market Dynamics Research Programme, Massey University, Albany and Palmerston North.
- Boven, R., C. Harland and L. Grace (2011), “More Ladders, Fewer Snakes: Two Proposals to Reduce Youth Disadvantage”, The New Zealand Institute (NZI), Auckland, July.

- Card, D., J. Kluge and A. Weber (2010), "Active Labour Market Policy Evaluations: A Meta-Analysis", *The Economic Journal*, Vol. 120, pp. F442-F477, November.
- Causa, O. and C. Chapuis (2009), "Equity in Student Achievement Across OECD Countries", *OECD Economics Department Working Papers*, No. 708, OECD Publishing.
- Collins, C.A. and L. Gan (2013), "Does Sorting Students Improve Scores? An Analysis of Class Composition", NBER Working Paper Series, No. 18848, February, <http://www.nber.org/papers/w18848>.
- Craigie, R., D. Gillmore and N. Groshenny (2012). "Matching Workers With Jobs: How Well is the New Zealand Labour Market Doing?", *Reserve Bank of New Zealand Bulletin*, Vol. 75, No. 4, pp. 3-12.
- Crampton, E. (2012), "Labour's Good Intentions Led to Bad Youth Unemployment", *The National Business Review*, Weekend Review, March.
- Crichton, S. (2012), *The Labour Market Returns to Industry Training*, Labour & Immigration Research Centre, Department of Labour, Wellington, February.
- Cross, B. (2003), "Bulk Funding in New Zealand: A Retrospective", *Education International Working Papers*, No. 8, September.
- Croucher, R. and G. White (2011), "The Impact of Minimum Wage on the Youth Labour Market: An International Literature Review for the Low Pay Commission", Middlesex University and University of Greenwich, March.
- Dalziel, P. (2012), "Toward a New Zealand System of Skill Ecosystems", *EEL Research Reports*, No. 11, Research Programme on Education Employment Linkages, AERU Research Unit, Lincoln University, 30 September.
- Department of Labour (2012), *Skills Challenges Report: New Zealand's Skills Challenges Over the Next 10 Years*, Department of Labour, Wellington.
- Dormer, R. (2011), "Child Welfare's Iron Cage: Managing Performance in New Zealand's Child Welfare Agency", *Working Paper Series*, No. 74, Centre for Accounting, Governance and Taxation Research, School of Accounting and Commercial Law, Victoria University of Wellington, May.
- Dumont, J.-C. and G. Lemaitre (2005), *Counting Immigrants and Expatriates in OECD Countries: A New Perspective*, OECD Publishing.
- Earle, D. (2009), *Advanced Trade, Technical and Professional Qualifications: Trends in Supply*, Ministry of Education, Wellington, June.
- Earle, D. (2011), "Literacy and Numeracy at Work: Skills, Education and Job Tasks", *Beyond tertiary study series*, Ministry of Education, Wellington, May.
- Education Review Office (ERO) (2011), "ERO Evaluation: The Establishment of Trades Academies", Wellington, July.
- Education Review Office (ERO) (2012), "Careers Information, Advice, Guidance and Education (CIAGE) in Secondary Schools", Wellington, August.
- Fabling, R. and D.C. Maré (2012), "Cyclical Labour Market Adjustment in New Zealand: The Response of Firms to the Global Financial Crisis and its Implications for Workers", *Motu Working Paper*, 12-04, Motu Economic and Public Policy Research, April.

- Fazekas, M. (2012), "School Funding Formulas: Review of Main Characteristics and Impacts", *OECD Education Working Papers*, No. 74, OECD Publishing. <http://dx.doi.org/10.1787/5k993xw27cd3-en>.
- Fergusson, D., H. Grant, J. Horwood and E. Ridder (2005), *Early Start Evaluation Report*, Christchurch Health and Development Study, Christchurch School of Medicine and Health Sciences, November.
- Finnie, R., R. Mueller, A. Sweetman and A. Usher (2010), "New Perspectives on Access to Postsecondary Education", Statistics Canada, Ottawa.
- Goedegebuure, L., P. Santiago, L. Fitznor, B. Stensaker and M. van der Steen (2008), *OECD Reviews of Tertiary Education: New Zealand*, OECD Publishing.
- Grubb, N.J. (2006), "Vocational Education and Training: Issues for a Thematic Review", OECD Publishing, <http://www.oecd.org/edu/highereducationandadultlearning/43900508.pdf>.
- Hill, R. (2012), "Robin Hill: Here's A Much Better Way To Produce More Engineers", *The New Zealand Herald*, 21 November.
- Heckman, J. and A. Krueger (2004), *Inequality in America: What Role for Human Capital Policies?*, Massachusetts Institute of Technology Press, Boston.
- Heckman, J. and D. Masterov (2007), "The Productivity Argument for Investing in Young Children", *NBER Working Paper*, No. 13016, <http://www.nber.org/papers/w13016>.
- Hipkins, R. (2007), "Taking the pulse of NCEA: Findings from the NZCER National Survey of Secondary Schools 2006", New Zealand Council for Educational Research, Wellington.
- Hobijn, B. and A. Sahin (2012), "Beveridge Curve Shifts across Countries since the Great Recession", *13th Jacques Pollack Annual Research Conference*, International Monetary Fund, 8-9 November, <http://www.imf.org/external/np/res/seminars/2012/arc/pdf/HS.pdf>.
- Hodgson, R. and J. Poot (2010), "New Zealand Research on the Economic Impacts of Immigration 2005-2010: Synthesis and Research Agenda", *Economic Impacts of Immigration Working Paper Series*, Dept of Labour, Wellington.
- Hyslop, D. and S. Stillman (2004), "Youth Minimum Wage Reform and the Labour Market", *New Zealand Treasury Working Papers*, 04/03, Wellington, March.
- Hyslop, D. and S. Stillman (2011), "The Impact of the 2008 Youth Minimum Wage Reform", Labour & Immigration Research Centre, Department of Labour, Wellington, August.
- International Association for the Evaluation of Educational Achievement (IEA) (2012), *PIRLS International Results in Reading Literacy*, TIMSS & PIRLS International Study Centre, Lynch School of Education, Boston College.
- Jaimovich, N. and H. Siu (2012), "The Trend is the Cycle: Job Polarization and Jobless Recoveries", *NBER Working Paper*, No. 18761.
- Joyce, S. and H. Parata (2012), "New Vocational Pathways Launched", 27 June, <http://www.beehive.govt.nz/release/new-vocational-pathways-launched>.
- Joyce, Hon. S. (2013), "New Zealand Apprenticeships to Support Skills & Boost Jobs", 25 January, <http://www.beehive.govt.nz/release/new-zealand-apprenticeships-boost-skills-amp-support-jobs>.

- Lock, K. and J. Gibson (2010), “Explaining Maori Under-Achievement in Standardised Reading Tests: The Role of Social and Individual Characteristics”, *Kotuitui: New Zealand Journal of Social Sciences Online*, 3:1, 1-13, <http://dx.doi.org/10.1080/1177083X.2008.9522428>.
- Loveless, T. (2013), “International Tests Are Not All the Same”, 9 January, www.brookings.edu.
- Maani, S. (2004), “Why Have Maori Relative Income Levels Deteriorated Over Time?”, *The Economic Record*, Vol. 80, No. 248, March, pp. 101-124.
- Maani, S. and G. Kalb (2007), “Academic Performance, Childhood Economic Resources, and the Choice to Leave School at Age 16”, *Economics of Education Review*, Vol. 26, pp. 361-374.
- Maani, S. (2009), “The Economic Impact of High Human Capital Immigration on the NZ Labour Market”, Motu Economic and Public Policy Research, Wellington.
- Mahoney, P., Z. Park and R. Smyth (2013), “Moving On: What People Earn After Their Tertiary Education”, Ministry of Education, January, http://www.educationcounts.govt.nz/publications/tertiary_education/115410
- Maré, D. and S. Stillman (2009), “The Impact of Immigration on the Labour Market Outcomes of New Zealanders”, *Motu Working Paper*, 09-11, Wellington, http://www.motu.org.nz/publications/detail/the_impact_of_immigration_on_the_labour_market_outcomes_of_new_zealanders.
- Meyer, L., J. McLure, F. Walkey, L. McKenzie and K. Weir (2006), “The Impact of the NCEA on Student Motivation: Final Report”, Victoria University of Wellington, June.
- Ministry of Business, Innovation and Employment (MBIE) (2013), *Occupation Outlook*, Wellington.
- Ministry of Education (MoE) (2011), “Retention of Students in Senior Secondary School”, Wellington www.educationcounts.govt.nz.
- Ministry of Education (MoE) (2013a), “History of Industry Training”, in *Review of Industry Training*, <http://www.minedu.govt.nz/NZEducation/EducationPolicies/TertiaryEducation/PolicyAndStrategy/ReviewIndustryTraining/HistoryOfIndustryTraining.aspx>.
- Ministry of Education (MoE) (2013b), “Employer Interviews and Survey Results”, in *Review of Industry Training*, <http://www.minedu.govt.nz/NZEducation/EducationPolicies/TertiaryEducation/PolicyAndStrategy/ReviewIndustryTraining/EmployerInterviewAndSurveyResults.aspx>.
- Mok, P., G. Mason, P. Stevens and J. Timmins (2012), “A Good Worker is Hard to Find: Skills Shortages in New Zealand Firms”, *Ministry of Economic Development Occasional Paper*, 12/05, Wellington, April.
- Morphis, E. (2009), “The Shift to School Choice in New Zealand”, National Center for the Study of Privatization in Education, Teachers College, Columbia University, Research Publications 179.
- New Zealand Government (2012), “Building Skilled and Safe Workplaces”, *The Business Growth Agenda: Progress Reports*, Wellington.
- New Zealand Qualifications Authority (NZQA) (2013), *Targeted Review of Qualifications*, Wellington.
- Nusche, D., D. Laveault, J. MacBeath and P. Santiago (2012), *OECD Reviews of Evaluation and Assessment in Education: New Zealand 2011*, OECD Publishing.

- OECD (2008a), *Jobs for Youth: New Zealand*, OECD Publishing.
- OECD (2008b), *Jobs for Youth: United Kingdom*, OECD Publishing.
- OECD (2010a), *PISA 2009 Results: What Makes a School Successful? – Resources, Policies and Practices (Volume IV)*, <http://dx.doi.org/10.1787/9789264091559-en>,
- OECD (2010b), *Learning for Jobs*, OECD Publishing.
- OECD (2011), “Pisa in Focus”, 2011/1, OECD Publishing, February.
- OECD (2012a), *Starting Strong III: A Quality Toolbox for Early Childhood Education and Care*, OECD Publishing.
- OECD (2012b), *Going for Growth*, OECD Publishing.
- OECD (2012c), *Education at a Glance*, OECD Publishing.
- OECD (2012d), *Taxing Wages*, OECD Publishing.
- OECD (2013a), *OECD Economic Surveys: New Zealand*, OECD Publishing.
- OECD (2013b), *Education Policy Outlook: New Zealand*, OECD Publishing, http://www.oecd.org/edu/EDUCATION%20POLICY%20OUTLOOK%20NEW%20ZEALAND_EN.pdf
- Oreopoulos, P. (2007), “Do Dropouts Drop Out Too Soon? Wealth, Health and Happiness From Compulsory Schooling”, *Journal of Public Economics*, Vol. 91, pp. 2213-2222.
- Pearce, D. and L. Gordon (2005), “In the zone: New Zealand’s legislation for a system of school choice and its effects”, *London Review of Education*, Vol. 3, No. 2, July, pp.145-157, <http://dx.doi.org/10.1080/14748460500163955>.
- Quintini, G. (2011), “Right for the Job: Over-Qualified or Under-Skilled?”, *OECD Social, Employment and Migration Working Papers*, No. 120, Paris, <http://dx.doi.org/10.1787/5kg59fcz3tkd-en>.
- Rasmussen, E., B. Foster and J. Murrie (2012), “The Decline in Collectivism and Employer Attitudes and Behaviours: Facilitating a High-Skill, Knowledge Economy?” mimeo, July.
- Rea, D. and P. Callister (2009), “The Changing Nature of Young People’s Transitions in New Zealand”. *IPS Working Paper*, 09/10, Institute of Policy Studies, Wellington.
- Ryan, P. (2001), “The School-to-Work Transition: A Cross-National Perspective”, *Journal of Economic Literature*, Vol. 39, No. 1, March, pp. 34-92.
- Scott, D. (2009), “What Do Students Earn After Their Tertiary Education?”, Ministry of Education, Wellington, http://www.educationcounts.govt.nz/publications/tertiary_education/57456
- Smyth, R. and C. Lane (2009), *Skills and Education: How Well Do Educational Qualifications Measure Skills?*, Ministry of Education, Wellington, August.
- Springford, L. (2006), “Tomorrow’s Primary Schools: Time to Evaluate Governance Alternatives”, *Policy Quarterly*, Vol. 2, No. 3.

Statistics Canada & Organisation for Economic Cooperation and Development (2011), *Literacy for Life: Further Results from the Adult Literacy and Life Skills Survey*, Ottawa and Paris.

Statistics New Zealand (2011), “Introducing the Youth Not in Employment, Education, or Training Indicator”, Wellington, December.

Sutherland, H. and R. Alexander (2002), “The Occupational Distribution of Maori 1997-2000”, *University of Otago Economic Discussion Papers*, No. 0204, April.

Sutherland, D., R. Price and F. Gonand (2009), “Improving Public Spending Efficiency in Primary and Secondary Education”, *OECD Journal: Economic Studies*, Vol. 2009, No. 1.

Tertiary Education Commission (TEC) (2012), *Tertiary Education Strategy 2010-15*, Ministry of Education, Wellington, December.

Ulrich, M., R. Smyth and W. Smart (2012), “The New Zealand Student Loan Scheme – ensuring access to tertiary education while maintaining affordability to the taxpayer”, Tertiary Education Group, Ministry of Education, Wellington.

Vaughan, K. and S. Boyd (2005), “Pathways, Junctions and Pitstops: Youth Transition Policy in New Zealand”, in N. Bagnall (ed.), *Youth transition in a globalised marketplace*, New York: Nova Science Publishers, Inc., pp. 99–118, <http://www.nzcer.org.nz/research/publications/pathways-junctions-and-pitstops-youth-transition-policy-new-zealand>.

Vaughan, K. (2011), “The Potential of Career Management Competencies for Renewed Focus and Direction in Career Education”, *The New Zealand Annual Review of Education*, Vol. 20, pp. 24-51.

Wylie, C., E. Hodgen, R. Hipkins and K. Vaughan (2008), “Competent Learners on the Edge of Adulthood: A summary of key findings from the Competent Learners @ 16 project”, New Zealand Council for Education Research and Ministry of Education, Wellington.

Wylie, C. (2012), *Vital Connections: Why We Need More Than Self-Managing Schools*, NZCER Press, Wellington.

Zuccollo, J., S. Maani, B. Kaye-Blake and L. Zeng (2013), “Private Returns to Tertiary Education: How Does New Zealand Compare?”, *New Zealand Treasury Working Paper*, No. WP 13/10, July.

Annex 1

The NZ school system: an institutional overview

Structure

The education system comprises three main levels (Figure A1.1):

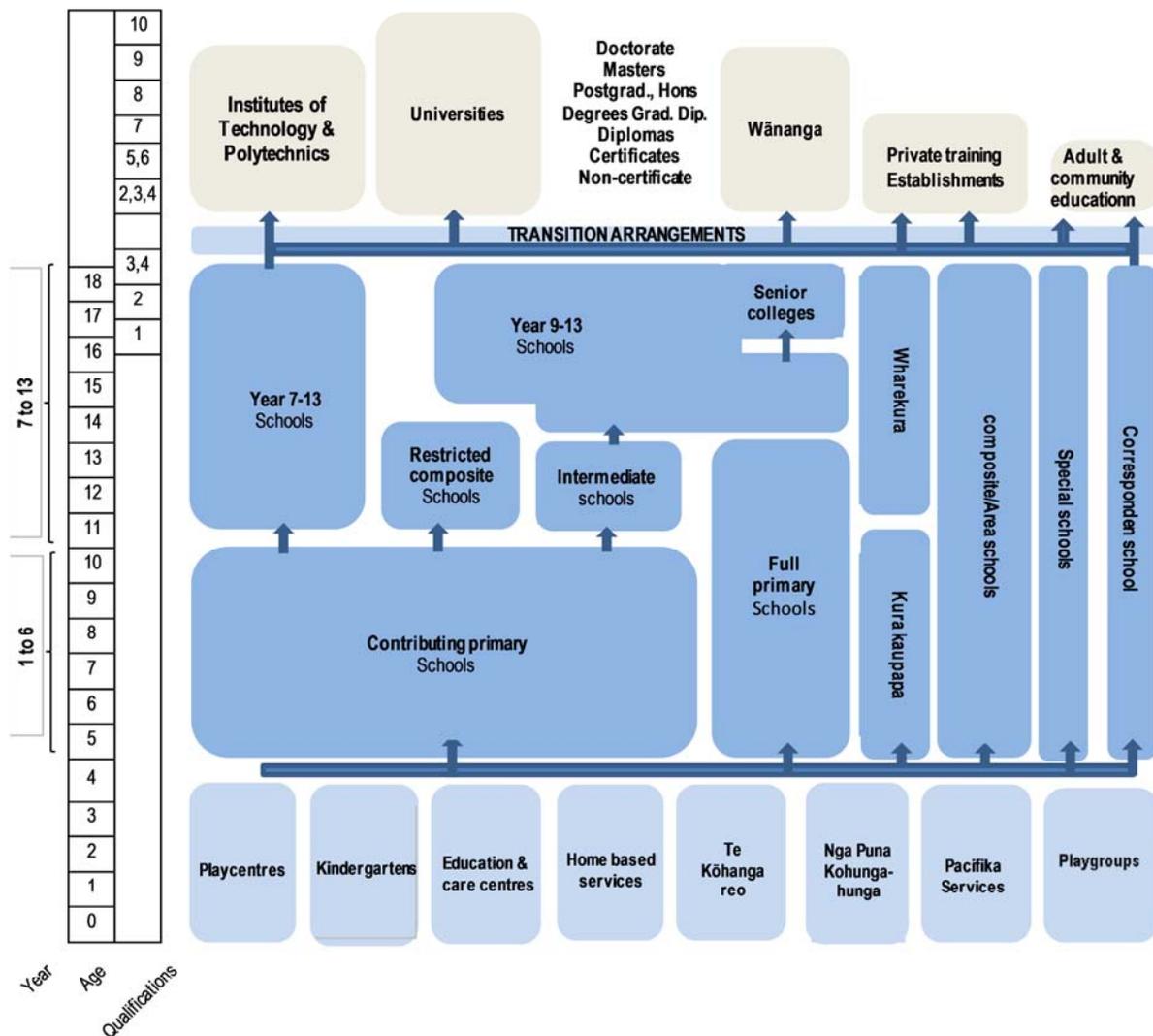
- *Pre-school*: covering a range of options such as kindergartens (traditionally ages 3-5, although some kindergartens now take children aged two and under), play centres and early childhood centres (0-5), and Māori-language-learning settings (Kohanga Reo). Home-based services are also available and are the most rapidly growing segment. Unlike in many other OECD countries, no distinction is made between early childhood education (ECE) and child care. Provision is private, apart from Te Kura (the correspondence school).
- *School*: divided into primary (ages 5-13) and secondary (ages 13-18), with ages 6-15 being compulsory and upper secondary (ages 16-18) providing preparation for tertiary education. University entrance requires attainment of an NCEA level 3 qualification, and direct entry into the job market usually requires at least NCEA level 2. Provision is predominantly public (85%), plus a small share (11%) of “state-integrated” schools, i.e. formerly private institutions, mostly church-affiliated and Māori-language, that retain their special character but receive partial government funding with an obligation to follow the national curriculum and meet state school standards. There are also a small number of private/independent schools (4%).
- *Tertiary*: consisting of *i*) 18 public institutes of technology and polytechnics (ITPs) with an emphasis on vocational education leading to industry-compatible certifications, diplomas and also degrees in advanced areas like engineering and sciences; *ii*) between 700 and 800 regulated private training establishments (PTEs) that offer training in foundation skills (remedial literacy and numeracy) and vocational certifications, while often being able to respond quickly to industry needs, many of which received public funding *iii*) three *wānanga*, or public Māori-focused training establishments; *iv*) eight public universities, offering advanced studies leading to bachelors and post-graduate degrees, as well teacher training; and *v*) around 20 industry training organisations (ITOs), which organise vocational education and training for employees, including apprentices, by subcontracting to PTEs and ITPs for delivery of the off-job component of their training. In addition to their teaching duties, the ITPs and universities conduct research, mainly applied and basic research, respectively.

Governance

Administrative authority for most education service provision is devolved from central government to the educational institutions, which are governed (in the state sector) by individual Boards or Councils, members of which are elected or appointed. School Boards are required to develop individual charters and annual plans and report their performance against these to the government. Such a highly devolved

self-managing system gives school leaders and teachers much autonomy, which requires capacity and professional development to meet responsibilities and active use of evaluation and assessment tools to improve student learning (OECD, 2013b). The role of the Ministry of Education is to provide education policy advice to the Minister and the government; allocate funding and resources to schools and ECE providers; oversee and support the implementation of approved education policies; manage special education services; undertake research and data gathering and dissemination functions; and monitor the effectiveness of the education system (Ministry of Education, 2008).

Figure A1.1. The education system



Source: Ministry of Education (2012), "The New Zealand Education System: An Overview".

Quality across the education system is largely the responsibility of four independent government agencies. The Education Review Office (ERO) regularly reviews ECE services and schools (to year 13) and makes its reports available to the public. Reviews normally take place every three years for each ECE service and school, but for under-performing schools they are more frequent. The Tertiary Education

Commission (TEC) is responsible for managing the tertiary education sector; all forms of post-school education and training come under its umbrella. The NZ Qualifications Authority (NZQA) validates national achievement standards for upper secondary and tertiary education and undertakes quality assurance in the non-university tertiary sector. The New Zealand Vice-Chancellors Committee (NZVCC), known as Universities New Zealand, and its subsidiary the Academic Quality Agency, share responsibility for quality assurance in the universities.

The quality of school governance depends very much on the capacity of the autonomous school boards. Such capacity may be weak, particularly among smaller primary schools in rural and poorer areas. Voter turnout for board elections is very low, and there are frequently only as many candidates as positions; the position of trustee is part-time and largely voluntary. Minorities tend to be under-represented, and in the mid-2000s the frequency of supplementary ERO reviews was four and a half times larger for decile 1-2 schools as for decile 9-10 schools (Springford, 2006). The government has attempted to address such problems through more training for boards and school leaders. The Education Amendment Bill (2012) sets clear expectations for boards, ensuring that student achievement is at the heart of their role (OECD, 2013b). There have also been proposals to aggregate small schools into clusters under professional management with elected parental advisory groups (Springford, 2006) or to create networks of supportive school districts that nurture the capacity of schools to self-manage (Wylie, 2013).

At the tertiary level, a key strength of the policy framework is the alignment of the sector with the country's objectives, as articulated in the Tertiary Education Strategy (see TEC, 2012). Others are a high degree of institutional autonomy, recognition of diversity and pioneering quality assurance. Yet institutional compliance does not always equate with achieving national goals, and the broadly defined sector has expanded very rapidly since the late 1980s' liberalisation and deregulation reforms, with variable quality (Goedegebuure et al., 2008). The government is taking steps to improve its steering of the system and to ensure more efficient provision in all its segments, notably via funding reforms (below).

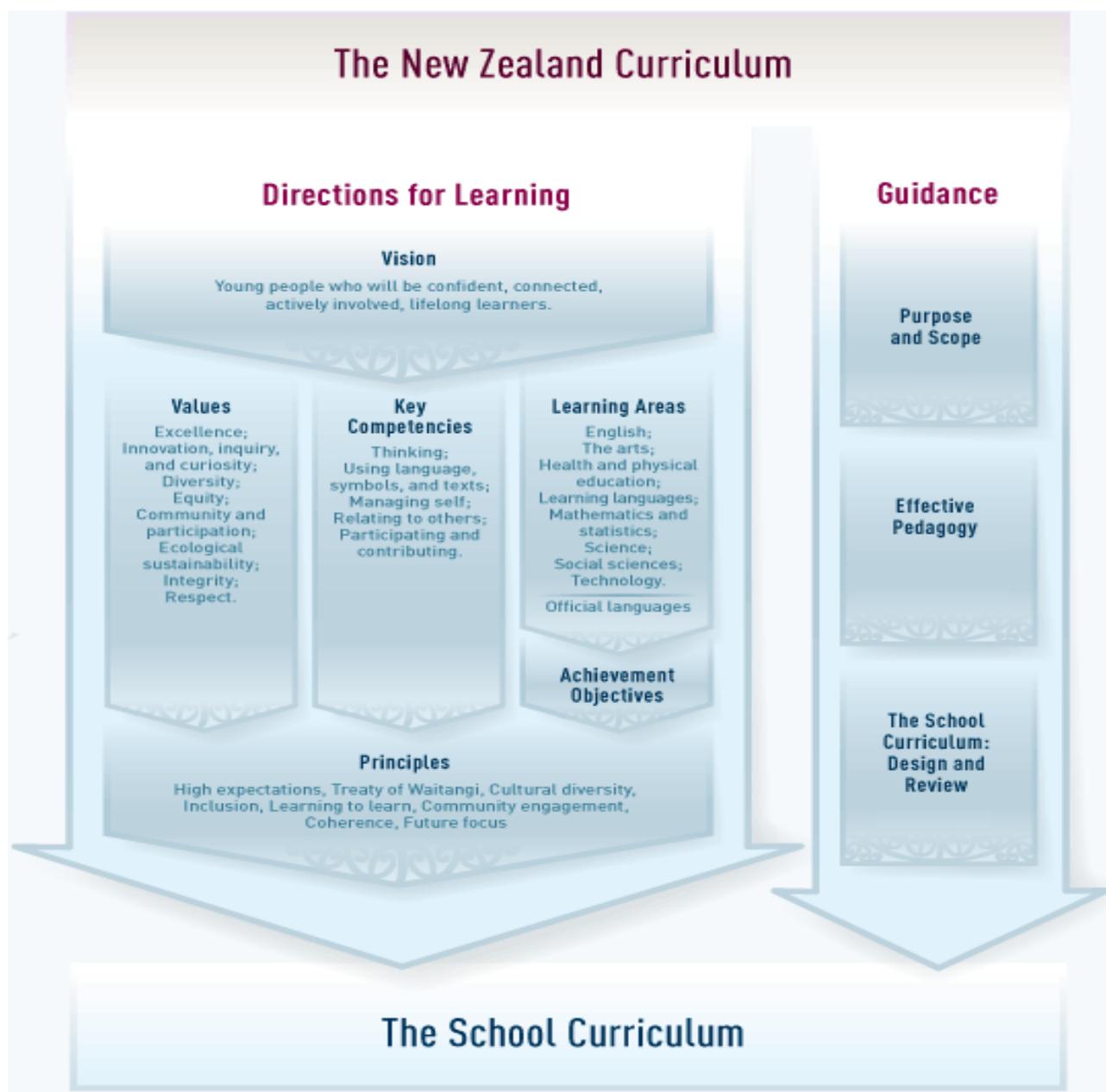
School and ECE curricula

The NZ national curriculum applies to all state schools and state integrated schools. It provides the guiding vision, principles and values for what education is meant to accomplish. The 2007 *New Zealand Curriculum* governs schooling (years 1-13) and identifies: *i*) the values of ambition, creativity, tolerance, equity, engagement, ecology and ethical behaviour; *ii*) five key competencies for living and life-long learning; and *iii*) eight learning areas considered important for a broad education (Figure A1.2).

The ECE curriculum, *Te Whāriki*, is a bicultural curriculum which emphasises social relationships and personal well-being, while recognising the importance of parental engagement and a stable home environment (interactions with family social policies) for children's early development (OECD, 2012a). Inclusive policies in ECE aim for greater equity in the entire education system (OECD, 2013b). The importance of the social context within which children are cared for and learning takes place is one of the foundation stones of *Te Whāriki*.

School leaders play a critical role in formulating the school's core values and vision within the national framework and in dialogue with the community, and in motivating teachers and students to clearly articulate these values and to learn to apply them and reflect upon them in everyday actions and situations. The curriculum is evaluated in terms of its capacity to stimulate early development in ECE and student achievement in schooling. School achievement is measured by National Standards for grades 1 to 8 (descriptions of what students should be able to do in reading, writing and mathematics as they progress) and National Certificates of Achievement (NCEA) for years 11 to 13; there is a lacuna for years 9-10.

Figure A1.2. The New Zealand Curriculum



Source: Ministry of Education (2007), *The New Zealand Curriculum*, Wellington.

Teachers are given flexibility and expected to develop effective assessment practices that meet the aspirations of the curriculum. Assessment tools have been developed by the national government, and aligned to professional development of teachers, school leaders and boards. The Ministry is also developing a Student Achievement Function to provide targeted support to schools to raise learner achievement, with priority being given to Maori, Pasifika and special-needs students.

The qualifications framework

Post-compulsory education is regulated within the New Zealand qualifications framework (NZQF), as assured by the NZQA. There are ten levels, encompassing various certificates and diplomas (both

vocational and academic post-graduate) and degrees (academic). Their correspondence to standard international classifications, followed by the OECD, is shown in Box A1.1.

Box A1.1. How NZ qualifications mesh with standard international qualification levels

The 10 levels of the NZQF generally map into the principal international standard classification levels of education (ISCED) as follows:

- ISCED 3 – Upper secondary education, covering years 11 to 13 in the NZ school system, corresponding to “national certificates of educational achievement” (NCEA) levels 1-3, plus lower level programmes in the tertiary sector such as NZQF level 1 to 3 certificates;
- ISCED 4 – Post-secondary non-tertiary education, corresponding most closely with advanced level 4 certificate programmes in the NZQF;
- ISCED 5a – Tertiary programmes that are largely theory based and intended to provide sufficient qualifications for gaining entry into advanced research programmes and professions with high skill requirements (often described as tertiary type-A programmes). In the NZQF, this level covers bachelor’s degrees, postgraduate diplomas and certificates, and master’s degrees, respectively corresponding to levels 7, 8 and 9;
- ISCED 5b – Tertiary programmes that focus on practical, technical or occupational skills for direct entry into the labour market (often described as tertiary type-B programmes). This level covers diploma programmes in New Zealand, corresponding to NZQF levels 5 and 6.
- ISCED 6 – Tertiary programmes devoted to advanced studies and original research and the awarding of advanced research qualifications. In the NZQF this translates into doctoral and equivalent studies, at level 10.

Each qualification has a specified credit value, or the amount of learning in the qualification, and assigned subject area classifications. In upper secondary, students can achieve the three NCEA levels through a wide variety of courses and subjects. There are also many vocational qualifications available under the NZQF and offered at upper secondary level. To achieve a qualification, standards must be achieved to demonstrate knowledge, which is in turn done by assessment. Some standards are internally assessed by teachers during the year, while others are assessed externally by NZQA at the end of the year e.g. in an exam or by a portfolio of work. For “unit standards”, which are competency based (vocational track), the assessment grade is pass or fail, while for “achievement standards”, which are NZ curriculum based (academic-track), there are four grades: Achieved (satisfactory performance), Merit (very good), Excellence (outstanding), or Not Achieved. NZQA has a formal quality assurance process to ensure that the assessment of each standard is fair across all students, regardless of the school they attend (see <http://www.nzqa.govt.nz/studying-in-new-zealand/quality-assurance-of-education-in-new-zealand/>).

For NZQF levels 1-6, i.e. tertiary vocational qualifications, there is a long-standing problem of a parallel set of industry qualifications and requirements that have made the system very confusing to learners, employers and unions. A Targeted Review of Qualifications (for NZQF levels 1-6) was undertaken in 2008-09 in response to these concerns. As a result of the review, the global qualifications system has been streamlined and consolidated under a unified NZQF and a procedure for periodic reviews and consultation with business and other stakeholders for its continuing relevance has been initiated (see <http://www.nzqa.govt.nz/studying-in-new-zealand/nzqf/targeted-review-of-qualifications/>).

Enrolment

Students can attend the school of their choice, space permitting, with funding following the student (OECD, 2013b). The 1989 school reform (“Tomorrow’s Schools”) abolished geographically based school enrolment schemes to open up school choice. This, however, led to popular schools in affluent areas expanding their rolls, and those elsewhere shrinking, leaving students with no guaranteed access to local schools. Also, once schools were at full capacity, enrolment schemes were used to help them select among applicants were often non-transparent and tended to favoured the privileged classes (Morphis, 2009).

Following a subsequent reform in 2000, schools that operate enrolment schemes now have a geographically defined “home zone”, where residence implies automatic entry to the school. Such schools are usually in urban areas or large towns where school density is high and choice is available. Students outside the zone can be admitted in order of priority: special programme students, children or siblings of past or present students, children of board employees, and all others who may be chosen by lottery. The lottery-based system essentially eliminated the possibility of cream skimming in out-of-zone selection (Pearce and Gordon, 2006), though housing prices have appreciated in zones of popular schools, which limits access for the poor (Morphis, 2009). All other schools have open enrolment, i.e. any child can enter, though school choice is often limited by long travelling distances in remote areas, where home schooling is another option.

To enhance information and accountability, the Ministry has developed the Education Counts website, which includes all education information as a one-stop online space with access to statistics, quantitative information and research, and detailed information on all schools in the country (OECD, 2013b).

Funding

Aggregate spending

In terms of overall education spending in relation to GDP, New Zealand ranks second highest in the OECD (Figure A1.3, Panel A). Both public and private spending ratios are above their OECD averages. In part, this reflects the country’s relatively high share of youth in the population; moreover, productivity and per capita GDP are lower in New Zealand than in many other countries. Public education spending as a share of total government spending is the highest in the OECD, followed closely by Mexico and Chile (Panel B). On a per student basis, however, New Zealand spends less than the OECD average (Panel C).

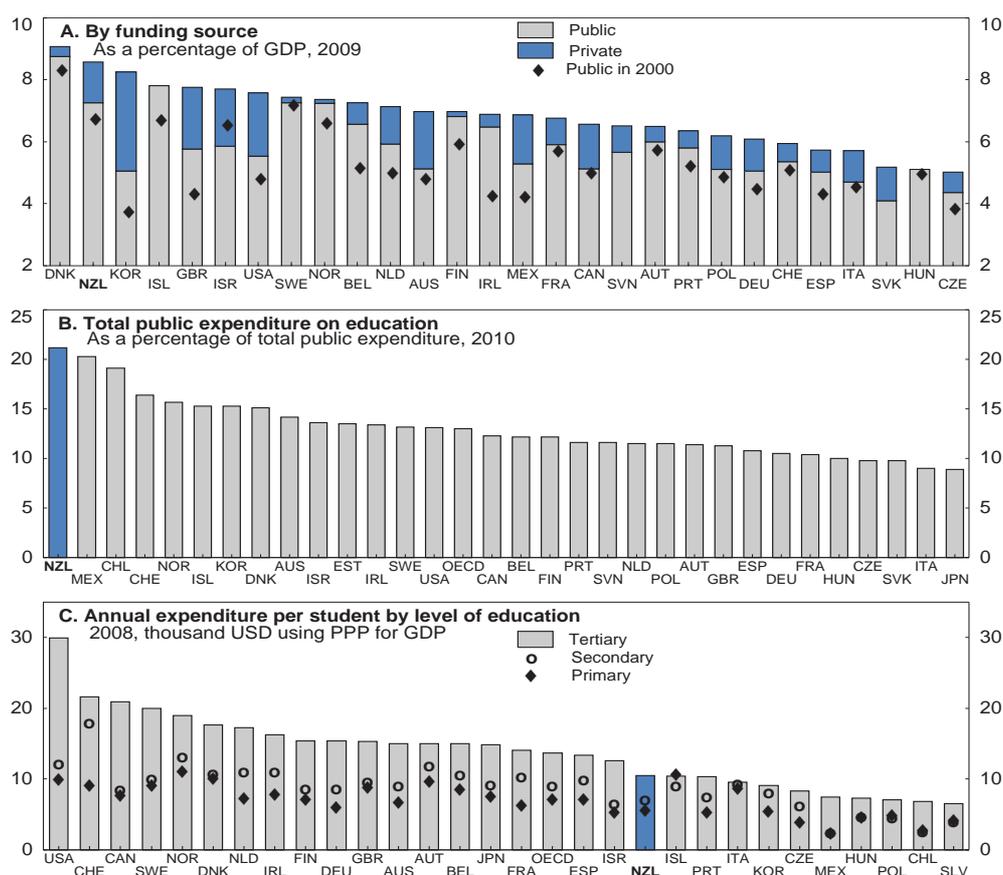
Pre-school and school

The ECE system is independent of government, consisting almost entirely of self-managing operators and organisations. Government is responsible for regulation, funding and various aspects of quality assurance. The current funding system provides universal subsidies, based on the costs providers face for different types of services. The government has progressively increased its share of funding. In July 2007 the introduction of 20 Hours ECE (previously known as 20 Hours Free ECE) further increased government expenditure. The majority of this funding goes directly to ECE providers rather than directly to the parent, though small top-up fees are typically charged by the provider. There are also more targeted childcare benefits such as the Childcare Subsidy and other assistance payments (administered by the Ministry of Social Development) and Equity Funding (administered by the Ministry of Education).

State and integrated schooling is fees-free. Government funding for the running of such schools is allocated on a per-student basis, though smaller schools and low-decile schools receive more funds than high-decile schools. The decile ranking indicates the extent to which a school draws its students from low socio-economic communities: decile 1 schools are the 10% of schools with the highest proportion of students from low socio-economic communities, while decile 10 schools are those with the lowest

proportion of such students. Most schools charge a tax-deductible “donation”, and integrated schools are permitted to charge additional levies for building upkeep. Schools also engage in a variety of fundraising from the community. Businesses may co-fund work-related projects (such as construction). Private schools charge tuition fees. Foreign students pay full fees and are being recruited at both primary and secondary levels in order to bolster school finances. As government funding has tightened, schools have made increasing recourse to such private sources of funding. Whereas middle-decile schools tend to recruit foreign students more actively, high-decile schools rely more on voluntary donations. This may, however, act as another implicit access barrier for the poor (Morphis, 2009).

Figure A1.3. **Expenditure on education by funding source**



Source: OECD.stat, Education and training and OECD Economic Outlook 92 database for Panel A; OECD *Education at a Glance 2012*, Table B4.1 for Panel B and Table B1.1a for Panel C.

Staff emoluments are decided through a centralised system of multi-tier bargaining and are paid by the Ministry of Education directly to teachers. A recently installed electronic teacher payroll services (Novopay) has been afflicted with technical problems and subject to a high level of public scrutiny (see <http://www.minedu.govt.nz/theMinistry/NovopayProject.aspx>). Under the 1989 “Tomorrow’s Schools” reforms, there was an attempt to move the responsibility of paying teachers’ salaries to the school Boards of trustees, which would receive a lump sum for all costs, including teacher salaries and running costs (“bulk funding”), and pilot programmes were initiated. Under opposition from teachers unions, bulk funding was scrapped in 2000 (Cross, 2003).

The Ministry of Education gives each Board of trustees a capital funding budget to use over a five-year period, so-called Five Year Agreement (5YA) funding. A range of factors are used to determine

5YA funding, including school rolls and depreciation of existing school property, but remain under the discretion of the Ministry. Expansion of some schools at the expense of others has wider school-network implications, and for this reason decisions about new capital works to support growing school rolls are made at central-government level.

Tertiary education

The TEC has full authority over the allocation of teaching and research funding (whose total amount is set by the Minister) of public tertiary institutions (ITPs, wānanga and universities). It also provides grants to and contracts with private providers for services, namely the ITOs and PTEs. A major issue is lack of alignment between the Student Component of government subsidies with the goals of the tertiary education strategy. The funding basis – the number of effective full-time students (EFTS) – has encouraged institutions to favour quantity of enrolments over quality of courses (Goedegebuure et al., 2008). This seems to have led the PTEs to concentrate on courses where the public subsidy is generous relative to the cost of provision. The ITPs, which have a public service obligation to cover a wider range of fields, may have had an incentive to recruit more international students in order to cross-subsidise their less “profitable” courses like science and engineering (Goedegebuure et al., 2008).

The TEC has set itself the goal of making funding more conducive to quality (TEC, 2012). The main tool is a gradual shift to performance-based funding (Box A1.2). In addition to performance indicators applied to all SAC-funded programmes at tertiary level, the government has recently introduced a purchase agreement for a proportion of student places in lower-level tertiary programmes. These purchase agreements have a strong focus on programme quality and student outcomes. The gradual shift to performance funding, and consequent restructuring in the PTE and ITO sectors, has caused some reduction of enrolments in courses leading to lower-level tertiary qualifications since 2005. These steps have led to improved performance by providers.

Box A1.2. Performance-linked funding

The Student Achievement Component (SAC) is an investment approach used to fund tertiary education organisations (TEOs). It is the government’s contribution to the direct costs of teaching, learning and other costs driven by learner numbers, and is partly linked to performance. A maximum of 5% of SAC (including Youth Guarantee) funding is currently contingent on performance of the TEO based on four indicators: successful course completion; student retention; qualification completion; and student progression. Industry training organisations will also have performance-linked funding. TEC publishes performance information annually for all SAC-funded TEOs and ITOs.

The TEC agrees the amount of TEOs’ SAC funding through Investment Plans, calculated as EFTS units. Tertiary Education Providers and ITOs also have to define performance commitments as part of their Investment Plans. These performance commitments encompass the Government’s priorities in the Tertiary Education Strategy 2010–15, for example, achievement for young people at higher levels of study. The SAC provides funding to reflect the volume and mix of provision agreed in a TEO’s Investment Plan. It is available only to providers of tertiary education. Industry training organisations receive funding through the Industry Training Fund.

SAC funding comprises two elements: *i*) the programme element, which relates to the types of programmes or courses approved for funding in a TEO’s Investment Plan, is based on the SAC funding categories; and *ii*) the volume element, which relates to the number of valid enrolments in those programmes or courses.

Source: <http://www.tec.govt.nz/Funding/Policies-and-processes/Performance-linked-funding/> and OECD (2013b).

Tertiary institutions each year negotiate a total number of equivalent full-time student places, which are funded by student fees and partially by government subsidies. Apart from the beneficiaries of the YG programme, all tertiary students are charged tuition fees, though some are also eligible for means-tested

government aid in the form of non-reimbursable student allowances. In addition, all residents are eligible for subsidised student loans covering fees, course-related expenses and sometimes living allowances. Liberal eligibility rules facilitate freedom of choice and diversity of provision, and expand lifelong learning opportunities (Goedegebuure et al., 2008). Repayment of the loan is dependent on future income, which is important for equity. In 2006, the interest component of student loans was abolished for debtors living in New Zealand, encouraging graduates to enter the labour market in New Zealand. The reform was not retroactive so students who borrowed before 2006 and who have yet to repay their loans still have to meet debt that resulted from interest accruals. Foreign students pay full tuition fees, except for doctorate degrees where fellowships are available and public externalities are deemed to be higher. New Zealand is a popular destination for international students, and it is marketing itself abroad in order to further increase its already substantial education export earnings. The quality of tertiary education is thus an important competitive advantage.

University entry has traditionally been open to all who fulfilled the minimum requirements in school-leaving examinations (so-called University Entrance, or UE). In 2010, however, UE was reviewed and subsequently tightened by requiring full NCEA level 3 attainment (though international qualifications are an acceptable substitute). At the same time, enrolments rose in response to the weakening job market for young people, and the government implemented capped funding, and most universities now have many courses with selective admissions to help universities manage their funding caps.

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